

EVENTLAB

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What is it?

- Bulk data/mask editor available in the New StackVision Client. It was first available in 6.4
- Used to create events with a defined start and end (or undefined end)
- Configured events can be processed inside the utility itself, or can be scheduled with ProcessNow using the APPLYEVENTS task

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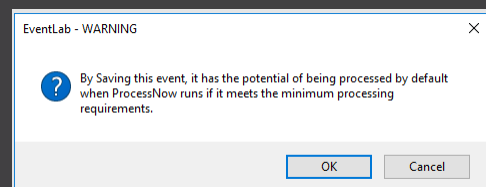
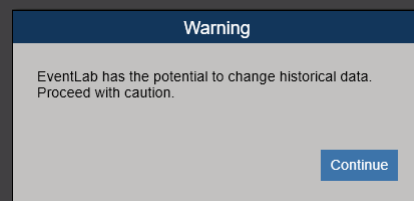
What are we covering today?

- How to add events in EventLab, and what it can edit currently
- A couple of practical applications of EventLab:
 - Assigning emissions factors
 - Assigning operating time for special operating conditions (like SSM)
- Provide a few tips/comments on use
- Discuss how else others are using it currently
- Gather feedback on possible improvements to this new utility

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Warnings

- EventLab is dangerous!
 - There are multiple warnings
- Changes can affect historical data



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What can EventLab edit today?

- The value for any configured parameter and interval in StackVision (i.e. 001M, 001H, 003H)
- The following data masks:

The image shows two side-by-side screenshots of the EventLab configuration interface. Both windows are titled 'Field(s):' and contain a list of checkboxes for data masks. The left window shows the following options: Missing, Invalid, OOC, General (expanded to show Missing, Invalid, OOC, Maintenance, Suspect, Substituted, Method Code, Diluent Capped, and Permit. The right window shows: Missing, Invalid, OOC, General (expanded to show Reason Code, Action Code, Exceedance, Startup, Shutdown), and Permit.

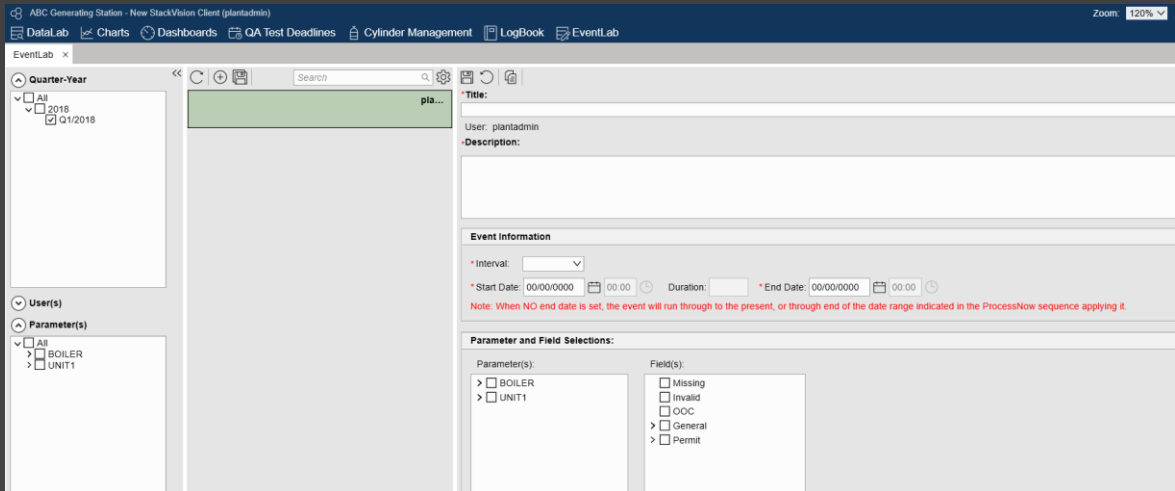
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Example #1 – Emissions Factor Replacement

- We can use EventLab to update emissions factor parameters on a scheduled basis
- What benefit does this add?
 - Easily traceable record of historical emissions factor values
 - Updates automatically with the APPLYEVENTS ProcessNow task
 - No need to remember to update math constants or equations
 - Ability to easily clone events with different event start/end times and values

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Example #1 – Emissions Factor Replacement



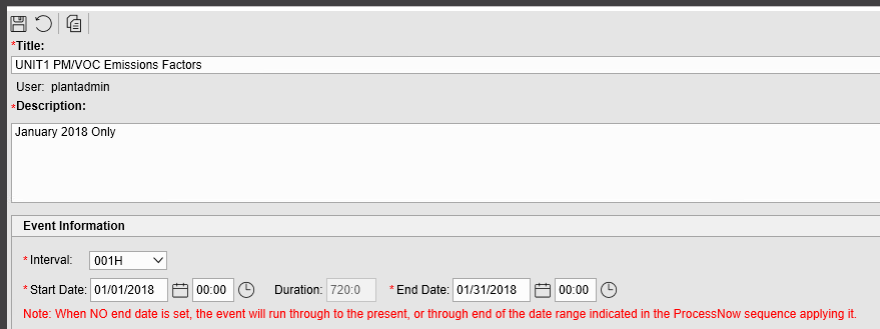
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Example #1 – Emissions Factor Replacement

- Define title, description, type of data and start/end time
 - Does not require an end time!



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Example #1 – Emissions Factor Replacement

- Choose parameters and fields for the event to edit
 - Fields selected will affect all selected parameters

Parameter and Field Selections:

Parameter(s):	Field(s):
<input type="checkbox"/> OP_HOURS <input type="checkbox"/> PM#/HR <input checked="" type="checkbox"/> PMCONST <input type="checkbox"/> PMLBS <input type="checkbox"/> PMTONS <input type="checkbox"/> PO_HOURS <input type="checkbox"/> PREC_CO <input type="checkbox"/> PREC_NOX <input type="checkbox"/> PREC_O2 <input type="checkbox"/> PURGE <input type="checkbox"/> RCALINVL <input type="checkbox"/> RCALTIME <input type="checkbox"/> RDLDOPHR	<input checked="" type="checkbox"/> Missing <input checked="" type="checkbox"/> Invalid <input type="checkbox"/> OOC <input checked="" type="checkbox"/> General <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Missing <input checked="" type="checkbox"/> Invalid <input type="checkbox"/> OOC <input type="checkbox"/> Maintenance <input type="checkbox"/> Suspect <input type="checkbox"/> Substituted <input type="checkbox"/> Method Code <input type="checkbox"/> Diluent Capped <input type="checkbox"/> Permit

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Example #1 – Emissions Factor Replacement

- Choose how the selected fields will be edited
 - Fields are disabled by default, right click and select "Enable" to allow the fields to be edited. Fields in grey will NOT be edited by Eventlab
 - Multiple fields can be enabled/disabled at the same time

Data:

Data Source	Value	MIS	INV
UNIT1:PMCONST	17.454	<input type="checkbox"/>	<input type="checkbox"/>
UNIT1:VOCCONST	1.245	<input type="checkbox"/>	<input type="checkbox"/>

Caution: All fields are disabled by default. To edit a cell, right-click on it and choose 'Enable'. One edited cell is required to process an event.

- When executed, the above will:
 - Assign UNIT1:PMCONST a value of 17.454 and clear the MISSING mask
 - Assign UNIT1:VOCCONST a value of 1.245 and clear the MISSING mask

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Example #1 – Emissions Factor Replacement

- There are two ways to run the event:
 - Use the “Apply” button at the bottom right of EventLab
 - Saves the event and applies it immediately for the start and end time programmed
 - Use the APPLYEVENTS ProcessNow task
- Since we have constituent parameters to calculate, we will use ProcessNow

Parameters x Start Page

Source	Name	Long Name	QA Enabled?	Parameter Code	Method Code (Default)	Monitoring Location	Graph Max	Graph Min	Certification Date	Decimal Positioner	Round Precision	Has Equation?	Equation
UNIT1	PM#/HR		<input type="checkbox"/>	(None)	01	CTG1	200	0	01/01/2010 00:00	4	4	<input checked="" type="checkbox"/>	PMCONST * UNITOPHR#1 =
UNIT1	VOC#/HR		<input type="checkbox"/>	(None)	01	CTG1	1000	0	01/01/2010 00:00	4	4	<input checked="" type="checkbox"/>	VOCCONST * UNITOPHR#1 =

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Example #1 – Emissions Factor Replacement

- Add the needed tasks to the appropriate ProcessNow sequence
 - In this case we will use the hourly ProcessNow sequence
 - We need to use APPLYEVENTS, then MATHPACK to make sure downstream parameters are recalculated

ProcessNow Sequences x Start Page

Sequence: PN_Hourly Description:

Add Sequence Rename Sequence Delete Sequence Copy Sequence Paste Sequence

Enabled?	Task	Sources	Parameters	Interval	Other Arguments
<input checked="" type="checkbox"/>	M2HR	UNIT1	UNIT1: NH3SLIP		
<input checked="" type="checkbox"/>	MATHPACK	UNIT1	UNIT1: CTGASFLW, UNIT1: DBGASFLW	001H (1 Hour)	-L -O
<input checked="" type="checkbox"/>	MATHPACK	UNIT1	UNIT1: CTHEATIN, UNIT1: DBHEATIN	001H (1 Hour)	-L -O
<input checked="" type="checkbox"/>	APPLYEVENTS				
<input checked="" type="checkbox"/>	MATHPACK	UNIT1	UNIT1: PMCONST, UNIT1: VOCCONST	(None)	-L -c
<input checked="" type="checkbox"/>	MATHPACK	UNIT1	UNIT1: GASFLOW, UNIT1: H2SO4#HR, UNIT1: O2, UNIT1: PM#/HR, UNIT1: VOC#/HR	(None)	-L -c
<input checked="" type="checkbox"/>	MATHPACK	UNIT1	UNIT1: CTRLS_ON, UNIT1: UNITLOAD	(None)	-O
<input checked="" type="checkbox"/>	MATHPACK	UNIT1	UNIT1: BSO2#MM, UNIT1: LOADMW, UNIT1: NORMOPHR, UNIT1: OP_HOURS, UNIT1: PO_HOURS	(None)	-O
<input checked="" type="checkbox"/>	MATHPACK	UNIT1	UNIT1: CO#HLIM, UNIT1: COCLIM, UNIT1: NH3#HLIM, UNIT1: NH3CLIM, UNIT1: NOX#HLIM, UNIT1: NOXCLIM, UNIT1: SO2#HLIM	(None)	-O

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Example #2 – Assigning Operating Time (SSM)

- Define title, description, type of data and start/end time
 - Be very careful with the start/end times, as we are editing 001M data

The screenshot shows a configuration window for an event. The 'Title' field is set to 'UNIT1 SSM OPTIME', the user is 'plantadmin', and the description is '01/01/18 02:23 - 01/01/18 - 04:54'. Under 'Event Information', the interval is '001M'. The start date is '01/01/2018' at '02:23', with a duration of '2:31' and an end date of '01/01/2018' at '04:54'. A red note at the bottom states: 'Note: When NO end date is set, the event will run through to the present, or through end of the date range indicated in the ProcessNow sequence applying it.'

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Example #2 – Assigning Operating Time (SSM)

- Choose parameters and fields for the event to edit
 - For this application, we do not care about editing fields

The 'Parameter and Field Selections' dialog box has two columns. The 'Parameter(s):' column contains a list of parameters with checkboxes: SO2LBS, SO2TONS, SSMOPHR (checked), STLOADMW, STRTCNTR, STRTOPHR, STRTSHUT, TOTLOAD, UNITLOAD, UNITOPHR, VOC#/HR, VOCCONST, and VOCCORR. The 'Field(s):' column contains checkboxes for Missing, Invalid, OOC, General, and Permit.

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Example #2 – Assigning Operating Time (SSM)

- Choose how the selected fields will be edited

Data:	
Data Source	Value
UNIT1:SSMOPHR	1

Caution: All fields are disabled by default. To edit a cell, right-click on it and choose 'Enable'. One edited cell is required to process an event.

- When executed, the above will:
 - Assign UNIT1:SSMOPHR a value of 1
 - Note that no fields were selected, so none show up in the Data section

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Example #2 – Assigning Operating Time (SSM)

- We are editing 001M data for use in 001H calculations, so we will use ProcessNow

Source	Name	Long Name	UNIT OF Measure	Enabled?	Parameter Group	QA Enabled?	Parameter Code	Method Code (Default)	Monitoring Location	Graph Max	Graph Min	Certification Date	Decimal Position	Round Precision	Has Equation?	Equation	
<input type="checkbox"/>	UNIT1	SSMOPHR	ONLINE	MIN	<input checked="" type="checkbox"/>	0 (STACK)	<input type="checkbox"/>	OPTIME - Operating Time (hr)	00	CTG1	60	0	01/01/2010 00:00	2	2	<input checked="" type="checkbox"/>	0=
<input type="checkbox"/>	UNIT1	NOXHSSM		LBHR	<input checked="" type="checkbox"/>	0 (STACK)	<input type="checkbox"/>	(None)	00	CTG1	200	0	01/01/2010 00:00	2	2	<input checked="" type="checkbox"/>	NOX#MM60 * HEATIN * SSMOPHR#100 =

- Notice the OPTIME parameter code for SSMOPHR

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Example #2 – Assigning Operating Time (SSM)

- Add the needed tasks to the appropriate ProcessNow sequence
 - In this case we will use our own separate ProcessNow sequence
 - We need to use APPLYEVENTS, M2HR to roll SSMOPHR up to a 001H total, and then MATHPACK to calculate constituents (namely NOX#HSSM)

ProcessNow Sequences x Start Page

Sequence: PN_Eventlab_SSMOPHR Description:

Enabled?	Task	Sources	Parameters	Interval	Other Arguments
<input checked="" type="checkbox"/>	APPLYEVENTS				
<input checked="" type="checkbox"/>	M2HR	UNIT1	UNIT1: SSMOPHR		
<input checked="" type="checkbox"/>	MATHPACK	UNIT1	UNIT1: SSMOPHR	(None)	-L-c

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Example #2 – Assigning Operating Time (SSM)

- Before ProcessNow:
- After ProcessNow:

DataLab

Date/Hour	UNIT1 NOX#HSSM Value	UNIT1 SSMOPHR Value
01/01/2018 00	0.00	0.00
01/01/2018 01	0.00	0.00
01/01/2018 02	0.00	0.00
01/01/2018 03	0.00	0.00
01/01/2018 04	0.00	0.00
01/01/2018 05	0.00	0.00
01/01/2018 06	0.00	0.00

DataLab

Date/Hour	UNIT1 NOX#HSSM Value	UNIT1 SSMOPHR Value
01/01/2018 00	0.00	0.00
01/01/2018 01	0.00	0.00
01/01/2018 02	29.92	37.00
01/01/2018 03	47.72	60.00
01/01/2018 04	54.18	55.00
01/01/2018 05	0.00	0.00
01/01/2018 06	0.00	0.00

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Examples #1 and #2 – Event list

The screenshot shows the EventLab application interface. On the left, there are filters for 'Quarter-Year' and 'User(s)'. The 'Quarter-Year' filter is set to '2018' with 'Q1/2018' selected. The 'User(s)' filter is set to 'All' with 'plantadmin (plant admin)' and 'xxescsupport' selected. The main area displays a list of events:

Start Time	Event Name	Plant
02/01/2018 00:00	UNIT1 PM/VOC Emissions Factors February 2018 Only	plant...
01/01/2018 02:23	UNIT1 SSM OPTIME 01/01/18 02:23 - 01/01/18 - 04:54	plant...
01/01/2018 00:00	UNIT1 PM/VOC Emissions Factors January 2018 Only	plant...

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List of EventLab tips

- When saving, the save button saves the event changes, whereas the Apply button saves AND runs the event for the entire duration
- Leaving the end date blank will cause the event to run through present when using Apply
 - In these circumstances, best to use the APPLYEVENTS task
- Use the “Copy to New Entry” to clone events
 - Good for ending one event and starting a new one
- In the Data section, a gray box means the mask is IGNORED, a blank box means it is CLEARED, a box with a check mark means it is SET.

Data:

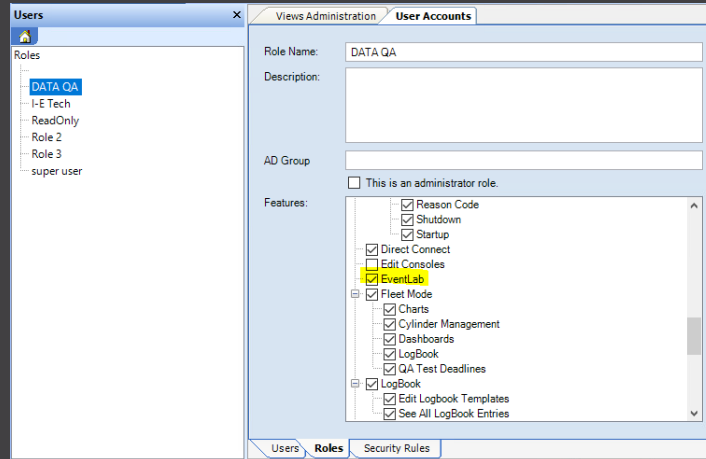
Data Source	Value	MIS	INV	MNT	SUS	SUB	MODC	AC
UNIT1:PMCONST	42	<input type="checkbox"/>						15
UNIT1:VOCCONST		<input type="checkbox"/>			<input checked="" type="checkbox"/>	<input type="checkbox"/>		

Caution: All fields are disabled by default. To edit a cell, right-click on it and choose 'Enable'. One edited cell is required to process an event.

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List of EventLab tips (cont.)

- Any user that has access to EventLab can change any event.
 - EventLab access can be restricted on a role basis in the User Accounts section of StackVision



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List of EventLab tips (cont.)

- EventLab is pretty fast
 - Updated values/masks for two parameters on the 001M level for one month in 10 seconds
 - Updated values/masks for two parameters on the 001H level for one month in 3 seconds
- EventLab will NOT edit future data
 - When you want continuous updates, leave the end date blank

Event Information

* Interval: 001H

* Start Date: 04/30/2019 00:00 Duration: * End Date: 00/00/0000 00:00

Note: When NO end date is set, the event will run through to the present, or through end of the date range indicated in the ProcessNow sequence applying it.

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Some possible improvements

- Here's some things we've discussed
 - Apply vs. Save
 - Considering removing the Apply button, and depending on APPLYEVENTS only
 - Ability to disable events
 - Run an event once, then disable it so it will not run again
 - APPLYEVENTS switches
 - Specify in ProcessNow which event you want to apply
 - Right now there is no ability to prevent others from running
 - Carry more information over from "Copy to New Entry"
 - Logbook entries
 - System design report with configured events

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For the group

- How are you using EventLab today?

- What improvements would you like to see to future releases?

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Questions

- Any other questions?