Instructions for Entering Information into the Process Emissions Button

Introduction

The "Process Emissions" button in the SLEIS database contains actual throughput, operational, and actual emissions data for each process. Information located in this button would be similar to the information found on the former INV-4 and INV-5 paper forms. This document will show the various fields located in the button and what information can be found or entered in it. If this is the first inventory being entered in SLEIS, the user will need to enter pollutants, emission factors, units of measure, calculation method codes, and operational data. However, this data will be copied over to subsequent inventory years so it will not have to be entered multiple times, therefore saving data entry time. In order to make any changes in SLEIS, a user with the editor role should click the "Edit" button and to save any changes made, click the "Save" button.

Main List Screen

This list contains all unit processes related to the facility. Once a process is created under the "Unit Processes" button, the unit process identifier will be displayed in the "Process Emissions" listing. If the unit process identifier is not listed in the "Process Emissions" button, check to make sure that the status for the unit process identifier is listed as "Operating" under the "Unit Process" tab in the "Unit Processes" button. If the unit process identifier is no longer operating at the facility, edit the unit process in the "Unit Processes" button and change the status from "Operating" to "Permanently Shutdown" and provide a year in the status year field for which the status became effective. If the process is not reporting emissions for the emissions year but can still operate at the facility, see the instructions for the "Process" tab on the next page.

The image below shows an example of the process emissions main screen.

Emission Unit Identifier:	Identifier:	SCC:	Annual Throughput:	Actions
EU-01 Boiler	EP-01 -1 Fuel Oil Combustion	10200502	5 1000 GALLONS (FUEL OIL) (Input)	

Process Tab

This tab contains information about the annual throughput. If you have any questions about the fields, you can click the ❓ icon and a window will pop up containing information about the field.

The fields presented in the tab are:

1. Information under the process tab that are not editable in the Process Emissions screen, but are editable by clicking their hyperlinks:
   a. Process Identifier: The unit process identifier assigned to the process.
   b. Emission Unit Identifier: The emission unit identifier associated with the process.
   c. SCC: eight-digit number that describes the process occurring. This is editable by clicking the process identifier hyperlink.
2. Process is Reported?: This box is automatically checked. If the process is still present at the facility but not reporting emissions for the emissions year, uncheck the checkbox. This will delete all data from the Process Emission, but will allow comments to be entered into the comments field.
   a. Please note: a pop-up box will appear when you uncheck the box that asks "Are you sure you want to permanently remove these pollutants?" because if you do save the record with the box unchecked, future inventories will not have the throughput unit of measure, throughput material, operations, pollutants and emissions factors pre-filled. To keep that data but report 0 emissions, keep the checkbox checked and report the annual throughput as 0.
3. Annual Throughput: The amount of material used or stored, fuel burned, vehicle miles traveled, or amount of product produced by the process during the emissions year.
4. Throughput Unit of Measure: Select the unit of measure of the throughput from the dropdown list.
5. Throughput Type: Select the point where the throughput is measured. Inputs are measured before the process, outputs after the process, and an example of existing would be a storage pile.
6. Throughput Material: The material being processed. This is a type-ahead field so once you begin typing the options will be selectable.
7. Supplemental Calculation Parameters: this field is not used to calculate emissions, however if there are supplemental calculation parameters for the percent ash, percent sulfur, or heat content they can be included here. These fields are not required.
8. Comments: This is an open field. Please include anything that might be helpful to DNR or the facility. This field is not required.

The image below shows an example of the Process Emissions Process tab completed for a fuel oil boiler.

2021 Emissions Report

In Process

Process Emissions

| Process | Operations | Emissions |

Process Identifier:
EP-01 -1 - Fuel Oil Combustion

Emission Unit Identifier:
EU-01 - Boiler

SCC:
10200502
External Combustion-Industrial: Boilers-Distillate Oil-10-100 Million BTU/hr

❓ **Process is Reported?:**
☑ Uncheck this box if there are no reportable emissions for the reporting year

❓ **Annual Throughput:**
5

❓ **Throughput Unit of Measure:**
E3GAL - 1000 GALLONS

❓ **Throughput Type:**
I - Input

❓ **Throughput Material:**
IA49 - FUEL OIL

❓ **Supplemental Calculation Parameters:**

% Ash   % Sulfur   Heat Content (MMBTU/Unit)

❓ **Comments:**

⊖ Cancel   💾 Save

Operations Tab

This tab contains information about the average operating schedule and seasonal operations. The information in this tab is required and contains the following data elements:

1. Average Hours/Day: This is limited to values less than or equal to 24 and with two or fewer digits past the decimal.
2. Average Days/Week: This is limited to values less than or equal to 7 and with two or fewer digits past the decimal.
3. Average Weeks/Year: This is limited to values less than or equal to 52 and with two or fewer digits past the decimal.
4. Actual Hours/Year: This is automatically calculated after completing the three preceding fields, but can be changed to within 0.5% of the calculated value.
5. Seasonal Operations must add up to 100 and allow only one digit past the decimal point.
   a. December - February: enter the percent of total operating time for the reporting year that occurred in January, February, and December.
   b. March - May: enter the percent of total operating time for the reporting year that occurred in March, April, and May.
   c. June - August: enter the percent of total operating time for the reporting year that occurred in June, July, and August.
   d. September - November: enter the percent of total operating time for the reporting year that occurred in September, October, and November.

The image below shows an example of the Operations tab.
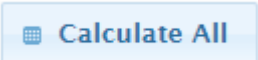
Emissions Tab

This tab contains the pollutants, emission factors, and actual emissions estimates for the process. If this is a new process to SLEIS, there may be no pollutants listed. To add a new pollutant, click the "Add" button in the bottom left corner.

Each reported pollutant has its own line. The pollutant line must be expanded by clicking on it to edit the data.

The fields presented in each pollutant line are:

1. Pollutant Code: This is a type-ahead field and contains all required criteria and hazardous air pollutants. This is a required field.
2. Calculation Method Code: select the code describing the type of emissions factor that is being used, including whether the emissions factor is pre-control or post-control. US EPA EF includes emissions factors from WebFIRE or AP-42. For more complicated emissions estimates, you could also select the calculation method code that does not include an emissions factor. These are indicated by "no EF" in parentheses. In that case, enter the emissions calculations in the comments field or attach them to the inventory under the "Report Attachments" button. This is a required field.
3. Emission Factor: This field is always in lbs/Unit. This is a conditionally required field which depends on the Calculation Method Code selected.
4. Emission Factor Unit: The unit of measure of the emission factor selected. This is a conditionally required field which depends on the Calculation Method Code selected.
5. Estimated Emissions (Tons): If the calculation method allows an emissions factor to be entered and the emission factor unit is the same as the throughput unit of measure, this field will be automatically calculated by SLEIS and not editable. If the calculation method does not allow an emission factor to be entered (i.e.: methods listed as "(no EF)") or the unit of measure does not match the throughput unit of measure, this is a required field and must be hand-entered. Please note the estimated emissions unit of measure is always tons.
6. Comment: This field is not required. However, it can be used to include emissions calculations.

7. Calculate button [⊞] : Click this button to calculate estimated emissions once all required fields are completed. SLEIS will then calculate the estimated emissions. This is not required, as SLEIS will calculate estimated emissions upon saving the record, but many users like to verify the emissions estimate before saving the record. This feature is similar to the Calculate All button [⊞ Calculate All] in the bottom left corner, which will calculate the estimated emissions for all pollutants which meet the data requirements.

8. Delete button [🗑] : Click this button to delete the individual pollutant record.

Upon completion of all required fields, click the "Save" button in the bottom right corner of the screen to save the process emissions record.

The image below shows an example of the Process Emissions Emissions tab completed for a fuel oil boiler.

2021 Emissions Report In Process

Process Emissions

| Process | Operations | **Emissions** |

Filter: [   ] ✕

Pollutant:	Emis. Factor (Lbs/Unit):	Emis. Factor UOM:	Calculation Method:	Estimated Emis. (Tons):
▼ PM25-PRI	1.55	E3GAL	8 - USEPA EF (post-control)	0.003874999999999

❓ Pollutant Code:
[PM25-PRI - PM2.5 Primary (Filt + Cond)]

❓ Calculation Method:
[8 - USEPA EF (post-control) ▾]

❓ Emission Factor (Lbs/Unit):
[1.55]

❓ Emission Factor Unit:
[E3GAL - 1000 GALLONS ▾]

❓ Estimated Emissions (Tons):
[0.003874999999999]   [▦] [🗑]

❓ Comment:
[1.55* 5 * 1 ton/2,000 lbs = 0.004 tons PM2.5]

▸ PM10-PRI	2.3	E3GAL	8 - USEPA EF (post-control)	0.005749999999999
▸ SO2	71	E3GAL	8 - USEPA EF (post-control)	0.177499999999999
▸ NOX	20	E3GAL	8 - USEPA EF (post-control)	0.05
▸ VOC	0.2	E3GAL	8 - USEPA EF (post-control)	0.0005
▸ CO	5	E3GAL	8 - USEPA EF (post-control)	0.0125
▸ NH3	0.8	E3GAL	8 - USEPA EF (post-control)	0.002

[⊕ Add] [▦ Calculate All]   [⊖ Cancel] [▣ Save]

Conclusion

The information found in the "Process Emissions" button contains information about throughput, operating schedule, emissions factors, emissions calculations, and actual emissions. It includes required fields and data validation messages. Any questions regarding data entry in this section should be directed to a member of the Air Quality Bureau's Emission Inventory Section using the SLEIS Help Desk email address: sleis@dnr.iowa.gov.