**Researching Emissions Data on DEQ Title V, Simple, and Standard Permits**

**Step I**. Locate the company source number in Column A by searching for the company name in Column C in the spreadsheet titled “2016\_deq\_co\_details.csv.”

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| A | B | C | D | E | F |
| company source no | filename | facility name | st addr | city addr | zip addr |
| 26-3135 | 263135-2Bu | Bullseye Glass Company | 3722 SE 21st Avenue | Portland | 97202 |

**Step 2**. Find out what emissions controls are in place by looking at the 2016\_deq\_cas\_data\_descriptors. Use the code Column A of the details spreadsheet above which corresponds to Column A of the emissions spreadsheet below. Here is an example from Bullseye after it installed a baghouse control device after citizen action. Bullseye Glass source code is 26-3135:

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| A | B | C | D | E | F | G | H | I | J | K | L |
| coSourceNo | desc\_row\_id | excel\_col\_dec | excel\_col\_alpha | cas\_code | cas\_name | unit\_a | data\_a | unit\_b | data\_b | unit\_c | data\_c |
| 26-3135 | 777 | 49 | AW | 7429-90-5 | aluminum | ef (lb/unit) | 0.000201 | 2016 emissions (lbs/yr) | 2.692333 | pmy emissions (lbs/yr) | 8.346231 |
| 26-3135 | 783 | 49 | AW | 7429-90-5 | aluminum | ef (lb/unit) | 0.002005 | 2016 emissions (lbs/yr) | 23.49591 | pmy emissions (lbs/yr) | 72.83733 |
| 26-3135 | 769 | 109 | DE | 7440-36-0 | antimony | ef (lb/unit) | 5.71E-05 | 2016 emissions (lbs/yr) | 0.021104 | pmy emissions (lbs/yr) | 0.063311 |
| 26-3135 | 774 | 109 | DE | 7440-36-0 | antimony | ef (lb/unit) | 9.31E-05 | 2016 emissions (lbs/yr) | 0.376782 | pmy emissions (lbs/yr) | 0.376782 |
| 26-3135 | 776 | 109 | DE | 7440-36-0 | antimony | ef (lb/unit) | 0.000571 | 2016 emissions (lbs/yr) | 1.534218 | pmy emissions (lbs/yr) | 1.534218 |
| 26-3135 | 768 | 119 | DO | 7440-38-2 | arsenic | ef (lb/unit) | 6.34E-05 | 2016 emissions (lbs/yr) | 0.001374 | pmy emissions (lbs/yr) | 0.123582 |
| 26-3135 | 774 | 119 | DO | 7440-38-2 | arsenic | ef (lb/unit) | 5.46E-06 | 2016 emissions (lbs/yr) | 0.022105 | pmy emissions (lbs/yr) | 0.022105 |
| 26-3135 | 780 | 141 | EK | 7440-39-3 | barium | ef (lb/unit) | 0.00015 | 2016 emissions (lbs/yr) | 0 | pmy emissions (lbs/yr) | 0 |
| 26-3135 | 786 | 141 | EK | 7440-39-3 | barium | ef (lb/unit) | 0.001501 | 2016 emissions (lbs/yr) | 0 | pmy emissions (lbs/yr) | 0 |
| 26-3135 | 774 | 200 | GR | 7726-95-6 | bromine | ef (lb/unit) | 5.54E-07 | 2016 emissions (lbs/yr) | 0 | pmy emissions (lbs/yr) | 0 |
| 26-3135 | 762 | 249 | IO | 7440-43-9 | cadmium | ef (lb/unit) | 9.87E-06 | 2016 emissions (lbs/yr) | 0.010068 | pmy emissions (lbs/yr) | 0.030798 |
| 26-3135 | 774 | 249 | IO | 7440-43-9 | cadmium | ef (lb/unit) | 0.000257 | 2016 emissions (lbs/yr) | 1.039685 | pmy emissions (lbs/yr) | 1.039685 |
| 26-3135 | 763 | 430 | PN | 7440-48-4 | cobalt | ef (lb/unit) | 1.35E-05 | 2016 emissions (lbs/yr) | 0.003678 | pmy emissions (lbs/yr) | 0.017498 |
| 26-3135 | 774 | 430 | PN | 7440-48-4 | cobalt | ef (lb/unit) | 6.88E-05 | 2016 emissions (lbs/yr) | 0.278528 | pmy emissions (lbs/yr) | 0.278528 |
| 26-3135 | 774 | 439 | PW | 7440-50-8 | copper and compounds | ef (lb/unit) | 0.000243 | 2016 emissions (lbs/yr) | 0.98 | pmy emissions (lbs/yr) | 0.98 |
| 26-3135 | 778 | 439 | PW | 7440-50-8 | copper and compounds | ef (lb/unit) | 0.00557 | 2016 emissions (lbs/yr) | 4.274801 | pmy emissions (lbs/yr) | 13.25188 |
| 26-3135 | 784 | 439 | PW | 7440-50-8 | copper and compounds | ef (lb/unit) | 0.055698 | 2016 emissions (lbs/yr) | 0 | pmy emissions (lbs/yr) | 0 |
| 26-3135 | 772 | 708 | AAF | 7664-39-3 | hydrogen fluoride | ef (lb/unit) | 0.210526 | 2016 emissions (lbs/yr) | 7755.924 | pmy emissions (lbs/yr) | 0 |
| 26-3135 | 773 | 708 | AAF | 7664-39-3 | hydrogen fluoride | ef (lb/unit) | 0.021053 | 2016 emissions (lbs/yr) | 443.8506 | pmy emissions (lbs/yr) | 1331.552 |
| 26-3135 | 760 | 857 | AFY | 7647-01-0 | hydrochloric acid | ef (lb/unit) | 3.042599 | 2016 emissions (lbs/yr) | 209.9393 | pmy emissions (lbs/yr) | 272.9211 |
| 26-3135 | 761 | 857 | AFY | 7647-01-0 | hydrochloric acid | ef (lb/unit) | 0.384485 | 2016 emissions (lbs/yr) | 312.5861 | pmy emissions (lbs/yr) | 406.3619 |
| 26-3135 | 765 | 894 | AHJ | 7439-92-1 | lead | ef (lb/unit) | 3.74E-06 | 2016 emissions (lbs/yr) | 0.01122 | pmy emissions (lbs/yr) | 0.063148 |
| 26-3135 | 774 | 894 | AHJ | 7439-92-1 | lead | ef (lb/unit) | 0.000756 | 2016 emissions (lbs/yr) | 3.060928 | pmy emissions (lbs/yr) | 3.060928 |
| 26-3135 | 767 | 913 | AIC | 7439-96-5 | manganese | ef (lb/unit) | 6.54E-05 | 2016 emissions (lbs/yr) | 0.044757 | pmy emissions (lbs/yr) | 0.13596 |
| 26-3135 | 774 | 913 | AIC | 7439-96-5 | manganese | ef (lb/unit) | 0.000172 | 2016 emissions (lbs/yr) | 0.698002 | pmy emissions (lbs/yr) | 0.698002 |
| 26-3135 | 774 | 1054 | ANN | 1313-27-5 | molybdenum trioxide | ef (lb/unit) | 1.37E-06 | 2016 emissions (lbs/yr) | 0 | pmy emissions (lbs/yr) | 0 |
| 26-3135 | 782 | 1054 | ANN | 1313-27-5 | molybdenum trioxide | ef (lb/unit) | 0.00015 | 2016 emissions (lbs/yr) | 0 | pmy emissions (lbs/yr) | 0 |
| 26-3135 | 764 | 1063 | ANW | 7440-02-0 | nickel | ef (lb/unit) | 1.27E-05 | 2016 emissions (lbs/yr) | 0.005288 | pmy emissions (lbs/yr) | 0.018122 |
| 26-3135 | 774 | 1063 | ANW | 7440-02-0 | nickel | ef (lb/unit) | 0.000105 | 2016 emissions (lbs/yr) | 0.425345 | pmy emissions (lbs/yr) | 0.425345 |
| 26-3135 | 766 | 1674 | BLJ | 7782-49-2 | selenium | ef (lb/unit) | 0.00015 | 2016 emissions (lbs/yr) | 0.053159 | pmy emissions (lbs/yr) | 0.175601 |
| 26-3135 | 774 | 1674 | BLJ | 7782-49-2 | selenium | ef (lb/unit) | 8.92E-05 | 2016 emissions (lbs/yr) | 0.361062 | pmy emissions (lbs/yr) | 0.361062 |
| 26-3135 | 781 | 1687 | BLW | 7440-22-4 | silver | ef (lb/unit) | 0.00015 | 2016 emissions (lbs/yr) | 0 | pmy emissions (lbs/yr) | 0 |
| 26-3135 | 779 | 1843 | BRW | 7440-66-6 | zinc | ef (lb/unit) | 4.50E-05 | 2016 emissions (lbs/yr) | 0.83 | pmy emissions (lbs/yr) | 2.57 |
| 26-3135 | 785 | 1843 | BRW | 7440-66-6 | zinc | ef (lb/unit) | 0.000454 | 2016 emissions (lbs/yr) | 1.733006 | pmy emissions (lbs/yr) | 5.372319 |
| 26-3135 | 774 | 1846 | BRZ | 1314-13-2 | zinc oxide | ef (lb/unit) | 0.005722 | 2016 emissions (lbs/yr) | 23.16467 | pmy emissions (lbs/yr) | 23.16467 |
| 26-3135 | 770 | 1849 | BSC | 7440-47-3 | chromium | ef (lb/unit) | 0.000106 | 2016 emissions (lbs/yr) | 0.002562 | pmy emissions (lbs/yr) | 0 |
| 26-3135 | 771 | 1849 | BSC | 7440-47-3 | chromium | ef (lb/unit) | 0.000695 | 2016 emissions (lbs/yr) | 0.134919 | pmy emissions (lbs/yr) | 0 |
| 26-3135 | 775 | 1849 | BSC | 7440-47-3 | chromium | ef (lb/unit) | 9.78E-05 | 2016 emissions (lbs/yr) | 0.062575 | pmy emissions (lbs/yr) | 0 |
| 26-3135 | 2624 | 109 | DE | 7440-36-0 | antimony | ef (lb/unit) | 5.71E-05 | 2016 emissions (lbs/yr) | 0.021104 | pmy emissions (lbs/yr) | 0.063311 |
| 26-3135 | 2629 | 109 | DE | 7440-36-0 | antimony | ef (lb/unit) | 9.31E-05 | 2016 emissions (lbs/yr) | 0.376782 | pmy emissions (lbs/yr) | 0.376782 |
| 26-3135 | 2631 | 109 | DE | 7440-36-0 | antimony | ef (lb/unit) | 0.000571 | 2016 emissions (lbs/yr) | 1.534218 | pmy emissions (lbs/yr) | 1.534218 |
| 26-3135 | 2623 | 119 | DO | 7440-38-2 | arsenic | ef (lb/unit) | 6.34E-05 | 2016 emissions (lbs/yr) | 0.001374 | pmy emissions (lbs/yr) | 0.123582 |
| 26-3135 | 2629 | 119 | DO | 7440-38-2 | arsenic | ef (lb/unit) | 5.46E-06 | 2016 emissions (lbs/yr) | 0.022105 | pmy emissions (lbs/yr) | 0.022105 |
| 26-3135 | 2617 | 249 | IO | 7440-43-9 | cadmium | ef (lb/unit) | 9.87E-06 | 2016 emissions (lbs/yr) | 0.010068 | pmy emissions (lbs/yr) | 0.030798 |
| 26-3135 | 2629 | 249 | IO | 7440-43-9 | cadmium | ef (lb/unit) | 0.000257 | 2016 emissions (lbs/yr) | 1.039685 | pmy emissions (lbs/yr) | 1.039685 |
| 26-3135 | 2618 | 430 | PN | 7440-48-4 | cobalt | ef (lb/unit) | 1.35E-05 | 2016 emissions (lbs/yr) | 0.003678 | pmy emissions (lbs/yr) | 0.017498 |
| 26-3135 | 2629 | 430 | PN | 7440-48-4 | cobalt | ef (lb/unit) | 6.88E-05 | 2016 emissions (lbs/yr) | 0.278528 | pmy emissions (lbs/yr) | 0.278528 |
| 26-3135 | 2627 | 708 | AAF | 7664-39-3 | hydrogen fluoride | ef (lb/unit) | 0.210526 | 2016 emissions (lbs/yr) | 7755.924 | pmy emissions (lbs/yr) | 0 |
| 26-3135 | 2628 | 708 | AAF | 7664-39-3 | hydrogen fluoride | ef (lb/unit) | 0.021053 | 2016 emissions (lbs/yr) | 443.8506 | pmy emissions (lbs/yr) | 1331.552 |
| 26-3135 | 2615 | 857 | AFY | 7647-01-0 | hydrochloric acid | ef (lb/unit) | 3.042599 | 2016 emissions (lbs/yr) | 209.9393 | pmy emissions (lbs/yr) | 272.9211 |
| 26-3135 | 2616 | 857 | AFY | 7647-01-0 | hydrochloric acid | ef (lb/unit) | 0.384485 | 2016 emissions (lbs/yr) | 312.5861 | pmy emissions (lbs/yr) | 406.3619 |
| 26-3135 | 2620 | 894 | AHJ | 7439-92-1 | lead | ef (lb/unit) | 3.74E-06 | 2016 emissions (lbs/yr) | 0.01122 | pmy emissions (lbs/yr) | 0.063148 |
| 26-3135 | 2629 | 894 | AHJ | 7439-92-1 | lead | ef (lb/unit) | 0.000756 | 2016 emissions (lbs/yr) | 3.060928 | pmy emissions (lbs/yr) | 3.060928 |
| 26-3135 | 2622 | 913 | AIC | 7439-96-5 | manganese | ef (lb/unit) | 6.54E-05 | 2016 emissions (lbs/yr) | 0.044757 | pmy emissions (lbs/yr) | 0.13596 |
| 26-3135 | 2629 | 913 | AIC | 7439-96-5 | manganese | ef (lb/unit) | 0.000172 | 2016 emissions (lbs/yr) | 0.698002 | pmy emissions (lbs/yr) | 0.698002 |
| 26-3135 | 2619 | 1063 | ANW | 7440-02-0 | nickel | ef (lb/unit) | 1.27E-05 | 2016 emissions (lbs/yr) | 0.005288 | pmy emissions (lbs/yr) | 0.018122 |
| 26-3135 | 2629 | 1063 | ANW | 7440-02-0 | nickel | ef (lb/unit) | 0.000105 | 2016 emissions (lbs/yr) | 0.425345 | pmy emissions (lbs/yr) | 0.425345 |
| 26-3135 | 2621 | 1674 | BLJ | 7782-49-2 | selenium | ef (lb/unit) | 0.00015 | 2016 emissions (lbs/yr) | 0.053159 | pmy emissions (lbs/yr) | 0.175601 |
| 26-3135 | 2629 | 1674 | BLJ | 7782-49-2 | selenium | ef (lb/unit) | 8.92E-05 | 2016 emissions (lbs/yr) | 0.361062 | pmy emissions (lbs/yr) | 0.361062 |
| 26-3135 | 2625 | 1849 | BSC | 7440-47-3 | chromium | ef (lb/unit) | 0.000106 | 2016 emissions (lbs/yr) | 0.002562 | pmy emissions (lbs/yr) | 0 |
| 26-3135 | 2626 | 1849 | BSC | 7440-47-3 | chromium | ef (lb/unit) | 0.000695 | 2016 emissions (lbs/yr) | 0.134919 | pmy emissions (lbs/yr) | 0 |
| 26-3135 | 2630 | 1849 | BSC | 7440-47-3 | chromium | ef (lb/unit) | 9.78E-05 | 2016 emissions (lbs/yr) | 0.062575 | pmy emissions (lbs/yr) | 0 |

**Step 3**. Identify the control devices, if any, for the facility using the spreadsheet named NEW 2016-deq-data descriptors.csv. Search for the source code to find the facility of interest. Use the code in Column B of the emissions data which corresponds to Column A of the controls spreadsheet. Below is the corresponding controls first row of the emissions above. Columns J below is a code that reports whether a control device is used in that process. In this row below Column J is blank, which means a control device is being used. If Column J had an "x" in it, then no control device is being used.

Control data, example below, is pasted in the spreadsheet you are building beside each row of corresponding emission data above. Now you know if each line of the emissions data has a control device capturing the emissions, or of no control device is used thus the emissions is sent straight into the air above the factory.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| A | B | C | D |  | E | F | G | H | I | J | K | L | M | N |
| 777 | Colored Art Glass Manufacturing in Controlled Furnaces | Colored Art Glass Raw Materials Containing Aluminum | 30501401 | 13426.08 | lbs | Metal | 41620.84 | lbs | Metal |  | Baghouse | >99% | 26-3135 | 263135-2BullseyeGlas |

**Step 4**. Eliminate all rows of emissions data that have no control device. Now you have uncontrolled emissions.

The final result is only Column F and Column J of the emissions spreadsheet data which is the chemical name emitted and the 2016 emissions expressed in pounds emitted.

**Step 5**. Include a line adding all chemical weights emitted by industry. Now rank all industries in order of total chemical weights emitted.