



Oregon Department of Environmental Quality

Summary of 2020 Toxics Release Inventory for Oregon

August 2023

Executive summary

The Oregon Department of Environmental Quality Air Quality division staff have created this summary of information provided by EPA for the 2020 Toxics Release Inventory. Anyone can use the EPA TRI website to find this information for themselves, but it may be difficult for many users to know how to review the databases and other information in a way that will let them understand what it means for people living in Oregon. We hope this summary will help.

The U.S. Environmental Protection Agency Toxics Release Inventory includes emissions data for on-site releases of toxic chemicals to air, water, and land from operating facilities. This Oregon Department of Environmental Quality TRI summary considers only TRI releases to air in Oregon. There were approximately 386 TRI facilities in Oregon emitting 139 TRI pollutants in 2020. TRI emissions data are estimates made by the facilities themselves, which are then reported to the TRI for each chemical emitted. These estimates are not measurements, but instead are mathematical calculations of what each facility estimates it is emitting.

EPA is the keeper of the original 2020 TRI database and is the appropriate agency to contact if complex questions arise. Information in this summary can be used by DEQ to identify emissions from facilities that might need further evaluation. DEQ pulled 2020 TRI data directly from EPA's TRI database and created spreadsheets to obtain lists of statewide TRI chemicals, lists of emitting facilities and their locations, amounts of chemicals emitted by each facility, and identify any trends in chemical emissions that have occurred over the past 10 years.

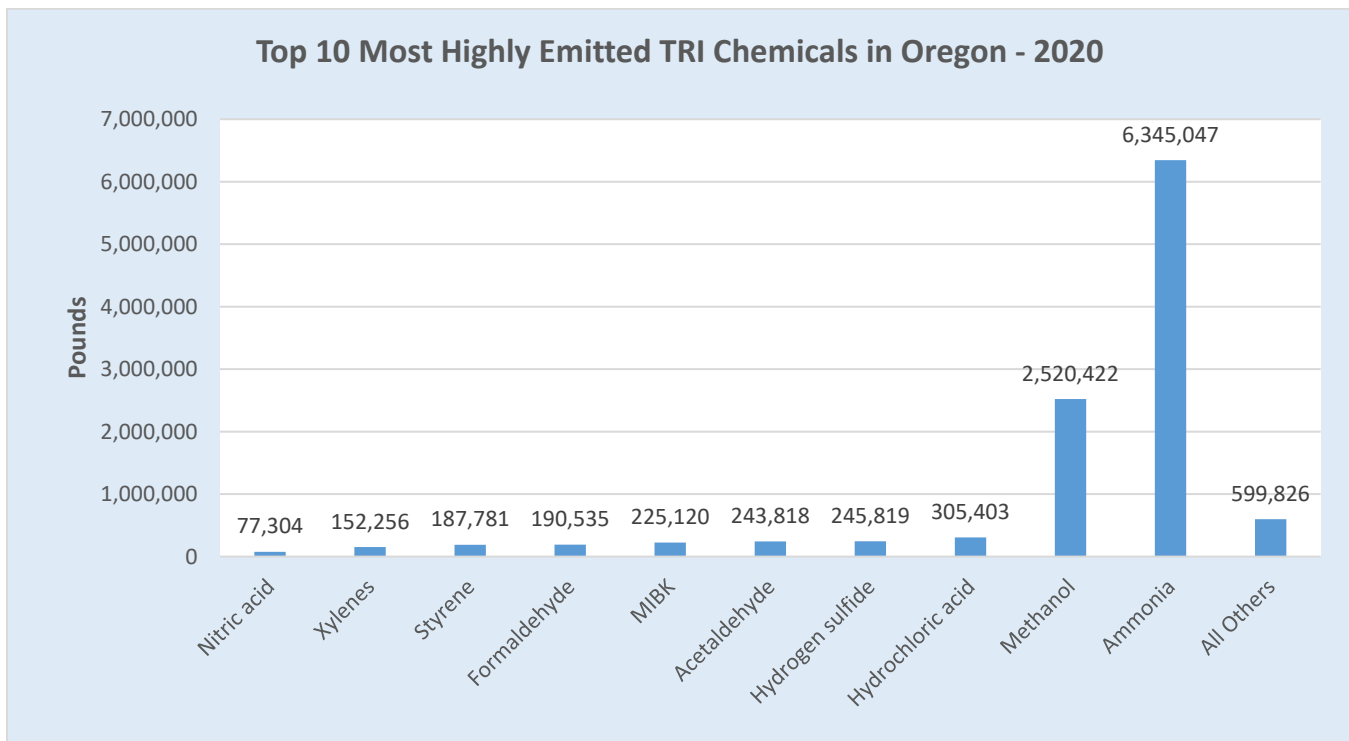
The total amount of emissions of all TRI chemicals statewide in 2020 was 11,093,331 pounds. To identify which TRI chemicals were emitted in the highest amounts, the top 20 highest emissions statewide were identified and further evaluated in this summary as discussed in Section 2.0. The bar graph shown below, Figure 1, presents amounts of the top 10 most highly-emitted TRI chemicals in Oregon in 2020. Note that estimated amounts of ammonia and methanol are more than 10 times higher than the other chemicals shown in the chart.

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Figure 1



In addition to identifying the most highly-emitted TRI chemicals, DEQ is also interested in identifying emissions of cancer-causing and noncancer-causing but toxic TRI chemicals. Therefore, DEQ ranked the top 20 cancer-causing and the top 20 noncancer TRI chemicals by comparing amount of chemical emitted to chemical toxicity (refer to Section 2.2 for further details). This gives DEQ a very rough idea of facility emissions that might be of more concern than others in terms of possible adverse health effects. These three lists of “top 20” chemicals contained overlap, resulting in a final list of 43 TRI chemicals, which are further evaluated in this summary.

Facilities that reported releases of the majority of emissions of these 2020 TRI chemicals are listed below. All of the facilities shown are on the Cleaner Air Oregon (CAO) program’s facility call-in list and are either currently under review or will be under review to determine any potential human health risks related to facility emissions of toxic air contaminants. If potential risks to human health are identified, then emission control requirements may be necessary.

- Acrolein (1,513 pounds) was estimated to be emitted almost entirely (83%) by **Douglas County Forest Products** located in Roseburg, Douglas County (This is a Group 3 facility in the CAO program.)
- Ammonia (6,345,047 pounds) was estimated to be emitted almost entirely (91%) by **Dyno-Nobel – St Helens Plant** located in Deer Island, Columbia County. (Group 3).
- Arsenic (19 pounds) was estimated to be emitted entirely (100%) by **Douglas County Forest Products** located in Roseburg, Douglas County (Group 3).
- Benzo(g,h,i)perylene (6 pounds) was estimated to be emitted by **Chemical Waste Management of the Northwest, Inc.** located in Arlington, Gilliam County. (Group 1, currently conducting an air toxics assessment).
- Carbon tetrachloride (39 pounds) was estimated to be emitted entirely (100%) by **Douglas County Forest Products** located in Roseburg, Douglas County (Group 3).
- Cobalt and cobalt compounds (394 pounds) were estimated to be emitted almost entirely (95%) by **Orchid Orthopedic Solutions Oregon Inc.**, located in Oregon City, Clackamas County. This facility was also estimated to emit 30% of the total amount of chromium and chromium compounds recorded statewide (563 pounds) in 2020 (Group 2).

- Dichloromethane aka Methylene chloride (16,726 pounds) was estimated to be emitted almost entirely (89%) by **Bend Research Manufacturing** located in Bend, Deschutes County (Group 3).
- 1,4-Dioxane (1,140 pounds) were estimated to be emitted entirely (100%) by **Lacamas Laboratories Inc.**, located in Portland, Multnomah County (Group 3).
- Ethylene glycol (15,822 pounds) was estimated to be emitted almost entirely (93%) by **Maxim Fab North** in Beaverton, Washington County (Group 3).
- Methyl isobutyl ketone (225,120 pounds) was estimated to be emitted entirely (100%) by **TDY Industries Inc. dba Wah Chang**, located in Albany, Linn County (Group 2).
- Naphthalene (8,534 pounds) was estimated to be emitted entirely (100%) by **Chemical Waste Management of the Northwest, Inc.** located in Arlington, Gilliam County. (Group 1, currently conducting an air toxics assessment).
- Phosgene (635 pounds) was estimated to be emitted entirely by **TDY Industries Inc. dba Wah Chang**, located in Albany, Linn County. This facility was also estimated to emit 45% (461 pounds) of the nickel and nickel compounds statewide in 2020. (Group 2)
- Tetrachloroethylene (7,187 pounds) was estimated to be emitted entirely (100%) by the **Boeing Company of Portland**, located in Portland, Multnomah County. This facility was also estimated to emit 32% (328 pounds) of the nickel and nickel compounds statewide in 2020 (Group 2.)
- Toluene diisocyanates (17 pounds) were estimated to be emitted entirely (100%) by **FXI, Inc.**, located in Portland, Oregon. (Group 3, aka *Hickory Springs of California, LLC*)
- Trichloroethylene (42,784 pounds) was estimated to be emitted entirely (100%) by **Entek International LLC**, located in Lebanon, Linn County. This is a Group 1 facility that is currently conducting a risk assessment overseen by CAO. (Group 1, currently conducting an air toxics assessment).
- Triethylamine (93 pounds) was estimated to be emitted almost entirely (93%) by **Suterra LLC** located in Bend, Deschutes County (Group 3).

Also, the top ten TRI reporters in Oregon in 2020 – that is, the ten facilities emitting the highest amounts of multiple chemicals, are presented in Section 2.4.

In addition, chemicals which appear in the 2020 TRI database, but which are not on CAO's Priority List or do not have assigned Toxicity Reference Values, are identified. This information is important because these chemicals may be considered for inclusion in the CAO program during the first triennial review of Toxicity Reference Values, which is taking place from Fall 2022 to 2023. A list of these TRI chemicals is provided in Section 2.5.

The 2020 TRI also identified Oregon facilities which do not have air permits, but still reported estimates to the TRI. A list of these facilities and the amounts of chemicals being emitted are provided in Section 4.0.

1.0 Evaluating Toxics Release Inventory data for Oregon

1.1 How the Toxics Release Inventory works

If a facility is emitting a pollutant in large enough amounts to exceed TRI limits, or thresholds, then that facility must submit emissions estimates for that pollutant to the TRI, as required by the EPA. There are basically three types of TRI thresholds:

- 1) If a facility **manufactures or processes** a chemical that is estimated to be emitted at greater than 25,000 pounds per year, and that chemical is *not* persistent, bioaccumulative, or toxic (“PBT” as defined per the Inventory), that facility must submit an emissions estimate to the TRI for that chemical.

“Persistent” means the chemical does not break down easily and stays around for a long time.

“Bioaccumulative” means that the chemical travels to the tissues of humans, animals, or plants and builds up to higher concentrations in that tissue over time. “Toxic” means the health effects a chemical has, such as causing cancer or things like liver damage.

- 2) Emissions estimates must also be submitted to the TRI if a chemical that is “otherwise used” at the facility and is *not* persistent, bioaccumulative, or toxic is emitted at greater than 10,000 pounds/year. The term “otherwise used” includes any use of a toxic chemical contained in a mixture or other trade name product or waste, that is not covered by the terms *manufacture* or *process*.

The TRI also has a list of 21 persistent, bioaccumulative, or toxic chemicals that must be reported at much lower levels if manufactured, processed, or otherwise used by a facility.

1.2 Limitations of the TRI

The TRI provides only certain kinds of information. Operating facilities are required to report to the TRI if they employ the equivalent of 10 or more full-time employees; if they manufacture, process, or other use of TRI-listed toxic chemicals at thresholds as described above; and must be either a federal facility or a “covered” industry as identified by the TRI using North American Industry Classification System-coded industries (e.g., mining facilities, utilities, primary metal manufacturing facilities, and others). This means, for example, that facilities manufacturing, processing, or otherwise using toxic chemicals at amounts less than the prescribed thresholds do not have to report to the TRI. In addition, the TRI only considers emissions coming from operating *facilities*, and so does not reflect other types of emissions that may be occurring, such as from cars and agricultural activities.

Facilities can change their initial emission estimates to the TRI at any time. Such revisions sometimes result in significant changes in emission estimates that don’t end up being consistently revised in the larger databases that combine TRI and other air toxics data, including EPA’s.

Finally, the TRI does not provide any of the potential human health risks related to the emissions reported to it. However, TRI data in combination with other air toxics databases are used by EPA to generate risk estimates for air toxics in the United States. These risk estimates are then provided through the sharing of EPA AirToxScreen data, which replaced the former National Air Toxics Assessment, or NATA, reports. EPA first provided AirToxScreen data for 2017 air emissions data in the fall of 2021. AirToxScreen reporting will occur every year.

1.3 Doubling of total TRI statewide air toxics emissions estimates for Oregon

In 2019 and 2020, an apparent large increase in TRI estimates for total air toxics emissions in Oregon occurred, as shown in [Table 1](#). In 2018, the total air toxics emissions estimate for Oregon statewide was 6,031,742 pounds. In 2020, this number increased to 11,582,925 pounds, which represents close to a doubling of TRI total air toxics emissions for Oregon in 2020. This increase is due to a single industrial source’s emissions of ammonia, which is the Dyno-Nobel St. Helens Plant, located in Deer Island, Oregon, in Columbia County – but the “increase” was based on TRI documentation errors.

Prior to 2019, Dyno-Nobel’s TRI estimates for their ammonia emissions were originally submitted as amounts ranging from 601,805 pounds in 2015 to 664,000 pounds in 2018. However, in November 2019, Dyno-Nobel revised their estimates of ammonia emissions for the years 2015-2018 to amounts ranging from about 6,000,000 pounds or slightly greater, each year, and resubmitted this information to the TRI. Revision of originally submitted estimates is allowed under the TRI program. However, EPA didn’t pass on the corrected ammonia estimates for Dyno-Nobel for the years 2015-2018, to its other programs which used the data. In 2019 and 2020, Dyno-Nobel submitted estimates of their ammonia emissions to the TRI as 6,293,794 pounds and 5,796,575 pounds, respectively. It appears that annual ammonia emissions from Dyno-Nobel have always been around 6,000,000 pounds.

2.0 How 2020 TRI air toxics data were ranked

2.1 Top 20 most highly emitted TRI chemicals

TRI air toxics can be ranked by listing them in order of highest to lowest emissions, measured in pounds per year. For the purposes of this summary, the top 20 most highly-emitted TRI chemicals are identified, and are listed below in Table 2 from highest to lowest. In addition, Figure 1 above presents a bar chart of the top 10 most highly emitted TRI chemicals in Oregon. [Table 2.a](#) provides additional information on these chemicals. The TRI chemical emissions estimates comprising the 20 highest emissions, from highest to lowest, include:

Table 2

Top 20 most highly emitted TRI chemicals	Emissions in 2020 (in pounds)
Ammonia	6,345,047
Methanol	2,520,422
Hydrochloric acid	305,403
Hydrogen sulfide	245,819
Acetaldehyde	243,818
Methyl isobutyl ketone	225,120
Formaldehyde	190,535
Styrene	187,781
Xylene (mixed isomers)	152,256
Nitric acid	77,304
Toluene	72,066
n-Butyl alcohol	69,388
Phenol	65,080
Chlorine dioxide	49,171
Cresol (mixed isomers)	48,718
Trichloroethylene	42,784
Hydrogen fluoride	27,818
Certain glycol ethers	25,641
Dichloromethane	16,726
Ethylene glycol	15,822

2.2 Ranking systems for carcinogenic potency and noncarcinogenic toxicity of 2020 TRI chemicals

DEQ chose to weight the Oregon TRI data by comparing emissions amounts to chemical-specific risk-based concentrations. Risk-based concentrations indicate the potency of carcinogenic chemicals and noncarcinogenic chemicals (refer to Cleaner Air Oregon Program rules, Oregon Administrative Rule 340-245-8010 - Table 2-Risk-Based Concentrations). A highly toxic chemical emitted in small amounts might be of more concern than a less-toxic chemical emitted in large amounts.

To make a comparison possible, chemical-specific emission amounts were divided by the risk-based value for that chemical. This calculation gives an approximate result that allows DEQ to see which TRI chemical emissions may be of greater concern for human health. A ranked list for carcinogenic chemicals and one for noncarcinogenic chemicals is available in Table 3 below. Note that some chemicals have both carcinogenic and noncarcinogenic effects, and so there will be some overlap between the two lists.

Table 3

Rank	Weighted by cancer potency and emissions	Weighted by noncancer toxicity and emissions
1.	Dioxins and dioxin-like compounds	Dioxins and dioxin-like compounds
2.	Polycyclic aromatic hydrocarbons (PAHs)	Hydrogen sulfide
3.	Chromium & chromium compounds	Chlorine dioxide
4.	Formaldehyde	Chlorine
5.	Arsenic	Nickel and nickel compounds
6.	Acetaldehyde	Formaldehyde
7.	Naphthalene	Manganese & manganese compounds
8.	Trichloroethylene	Trichloroethylene
9.	Epichlorohydrin	Hydrochloric acid
10.	Ethylbenzene	Hydrogen fluoride
11.	Benzene	Ammonia
12.	1,4-Dioxane	Lead and lead compounds
13.	Nickel & nickel compounds	Acrolein
14.	Tetrachlorethylene	Cobalt
15.	Benzo(g,h,i)perylene	Naphthalene
16.	Methyl tert-butyl ether	Triethylamine
17.	Carbon tetrachloride	Phosgene
18.	Toluene diisocyanates (mixed isomers)	Acetaldehyde
19.	Pentachlorophenol	Epichlorohydrin
20.	Vinyl chloride	Chromium and chromium compounds

2.3 Permitted facilities that emitted majority of TRI chemicals in the “Top 20” lists in 2020

Important conclusions about 2020 TRI data in Oregon can be drawn from the information in [Table 4](#). This table lists facilities that are emitting significant percentages of statewide emissions for various TRI chemicals. The facilities that emit 83 percent to 100 percent of a chemical emitted statewide are shaded in yellow in Table 4.

These percentages indicate that a single facility is mostly or entirely responsible for the emissions statewide of each chemical. In addition, facilities that emitted more than one chemical at higher proportions are either presented in the same color font or shaded using the same color. The DEQ source identification numbers, facility names, and city and county locations of each facility are presented as well.

Health effects are summarized for each chemical in Column G of Table 4. A chemical can have carcinogenic effects, adverse noncarcinogenic effects, or both. Noncarcinogenic adverse health effects include things like damage to body systems and organs, for example the kidney or nervous system. Chemicals that cause developmental or reproductive problems are considered by DEQ to be of greater concern than other kinds of adverse noncancer effects.

Lastly, general chemical emission trends are shown for downward, stable, and increasing amounts from the years 2011 through 2020 in Column H of Table 4, and can be seen in greater detail in Table 1. Downward trends are the most desirable, because it means exposure of human populations to those chemicals are decreasing. Increasing trends indicate a potential concern.

Some conclusions that can be drawn from studying Table 4 are listed below, as examples of the types of information that are available:

- Douglas County Forest Products, located in Roseburg, was estimated to have emitted 100 percent of the **arsenic** emissions statewide (19 pounds), 100 percent of the **carbon tetrachloride** emitted statewide (39 pounds), 100 percent of the **vinyl chloride** emitted statewide (15 pounds), 83 percent of the **acrolein** emitted statewide (1,513 pounds), and 31 percent of the **manganese and manganese compounds** emitted statewide (1,372 pounds). As you can see by looking at the related health effects shown in the table, each of these compounds have fairly severe health effects, such as carcinogenic effects or adverse impacts to the developmental system and/or nervous system. Emissions of acrolein, arsenic, and carbon tetrachloride from this facility appear to be trending up. This facility is on CAO's facility call-in list at the Group 3 level.
- A highly toxic and carcinogenic chemical, **trichloroethylene**, was estimated to have been emitted in Oregon entirely by Entek International, LLC in 2020 (42,784 pounds). It appears that these emissions are trending downward over time. This facility is currently undergoing an air toxics assessment under CAO to determine whether its emissions are harming the health of human populations in the area.
- **Phosgene**, which is a highly toxic chemical that was utilized in World War I as a nerve gas, is being emitted by TDY Industries Inc. DBA Wah Chang in Albany at a rate of 635 pounds per year. These emissions appear to have been relatively stable since 2016. This facility is on CAO's facility call-in list at the Group 2 level.
- The Boeing Company of Portland is entirely responsible for 100 percent of the **tetrachloroethylene** (aka perchloroethylene) reported to the TRI for Oregon in 2020, with 7,187 pounds estimated to have been emitted. Tetrachloroethylene is a carcinogenic compound that also adversely affects the nervous system, as well as other body systems, the kidney, and the liver. Emissions from this facility have been trending downward, and this facility is on CAO's facility call-in list at the Group 2 level.

The emissions in Table 4 represent estimated amounts submitted to the TRI by the facilities themselves. Although TRI data are based on emissions estimates rather than monitored air data, DEQ uses the TRI to identify some air toxics that might need more attention by DEQ. Most of the chemicals in Table 4 are emitted by facilities that are already permitted by the DEQ Air Quality division. The majority emitters listed above are on Cleaner Air Oregon's facility call-in list and are either in the process of investigating potential human health risks associated with their emissions or will be in the near future. Facilities called in by Cleaner Air Oregon are required to control, treat, or cease their emissions based on the human health risks associated with them.

2.4 Top ten highest TRI reporters in Oregon in 2020

In the previous section, the top ten most-highly-emitted pollutants in Oregon were discussed. In this section, the ten facilities emitting the highest amounts of multiple chemicals, or the top ten highest TRI reporters, are shown in the table below. For example, the Oregon facility that emitted the highest amount of multiple

chemicals is Dyno Nobel – St Helens Plant in Deer Island. The majority of these emissions were due to ammonia, but the facility emitted nitric acid and formaldehyde, as well.

Table 5: Top Ten Highest Reporters of TRI Chemicals in 2020

Rank	Company Name and Location	Sum of Pollutants (lbs/year)
1	DYNO NOBEL- ST HELENS PLANT, Deer Island	5,826,083
2	CASCADE PACIFIC PULP HALSEY PULP MILL, Halsey	1,155,303
3	GEORGIA-PACIFIC TOLEDO LLC, Toledo	807,987
4	INTERNATIONAL PAPER, Springfield	453,964
5	GEORGIA-PACIFIC CONSUMER OPERATIONS LLC, Clatskanie	342,547
6	COLLINS PRODUCTS LLC, Klamath Falls	264,852
7	TDY INDUSTRIES INC DBA WAH CHANG, Albany	244,514
8	ROSEBURG FOREST PRODUCTS DILLARD COMPLEX, Dillard	218,002
9	ARAUCO NA INC - DURAFLEAKE PARTICLEBOARD, Albany	92,688
10	PGE BEAVER PLANT & PORT WESTWARD PLANT, Clatskanie	92,541

Note that this metric – that is, identifying which ten Oregon facilities reported the highest emissions of total TRI chemicals in 2020 – was not used in the 2018 or the 2019 TRI summaries created by DEQ. The top ten highest reporters of TRI chemicals will be provided in TRI summaries from 2020 on.

2.5 2020 TRI-reported air pollutants without toxicity information

Some TRI pollutants that were emitted by Oregon facilities in 2020 do not have available toxicity information, and so do not appear in Cleaner Air Oregon’s Table 2 – Toxicity Reference Values, OAR 340-247-8020. This means their potential health risks cannot be evaluated unless new toxicity information becomes available for these chemicals in the future. These include:

1. Barium
2. Boron trichloride
3. Butyl acrylate
4. n- Butyl alcohol
5. Catechol
6. Creosote
7. Dicyclopentadiene
8. Dimethyl phthalate
9. Formic acid
10. 4,4-Isopropylidenediphenol
11. Methyl acrylate
12. N-methyl-2-pyrrolidone
13. Molybdenum trioxide
14. Nitrate compounds
15. Zinc compounds

3.0 2020 TRI emissions regulated under the Cleaner Air Oregon Program

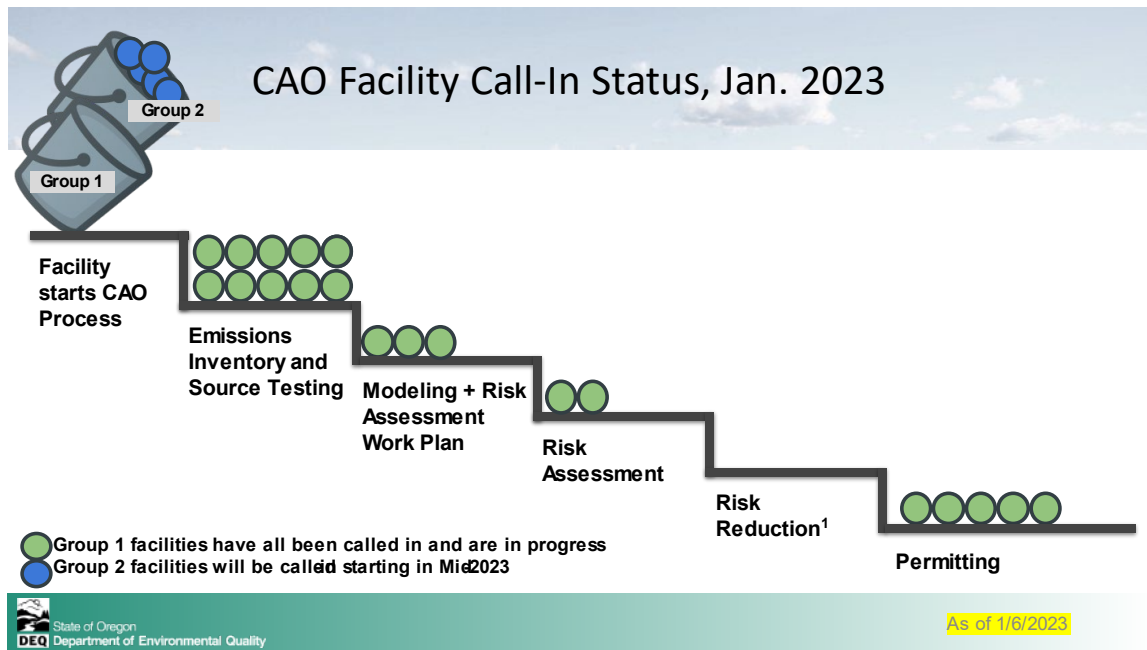
Table 4 lists the TRI pollutants and facilities of most concern in 2020 based on the ranking systems described in sections 2.1 and 2.2, as well as the permitted facilities that emitted the majority of each of those pollutants in Oregon in 2020. Many of the facilities in Table 4 have been, are being, or will be called in by the Cleaner Air Oregon program to assess potential human health risks related to their emissions.

Further information on the Cleaner Air Oregon facility call-in process can be found On the [Cleaner Air Oregon Facilities page](#). Facilities being called in by Cleaner Air Oregon are sorted into Prioritization Groups.

Prioritization Groups were determined by CAO considering each facility’s assigned Prioritization Score and available Qualitative Data, as defined by CAO. Results are compiled into the following groups:

- Group 1: (20) facilities to be called-in during the first year; as of December 2022, all have been called in and have begun the assessment process.
- Group 2: (20) facilities to be called in the second year, after Group 1 facilities.
- Group 3: (315) lower-priority facilities to be called in as resources permit or if new information becomes available.

Figure 2



The graphic above indicates that the facilities and chemicals from the 2020 TRI that are presented in Table 4 are being overseen and regulated by DEQ through the CAO program.

4.0 Emissions from unpermitted Oregon facilities

It is important to identify chemicals estimated to be emitted from facilities in Oregon which do not currently have air quality permits, so that the DEQ can determine whether a facility may be required to obtain an air quality permit. There are 66 facilities in Oregon that reported TRI estimates for 2020, but that are not under permit by Oregon DEQ’s Air Quality division. The names, locations and types of emissions from these facilities are available in [Table 6](#).

Many of these facilities reported zero emissions in 2020 for chemicals they may have emitted in the past. DEQ can use this information to keep track of unpermitted facilities that might require an air permit.

Facilities are required to contact the DEQ Air Quality permitting program if they think they may be emitting chemicals that would require them to get a DEQ Air Permit. To obtain an air permit, a facility must undergo a review process by DEQ that uses specific criteria to determine if a permit is needed. In 2020, all existing permitted facilities in Oregon with simple, standard, or Title V air permits were reviewed and categorized by the CAO program. Any new facilities (also referred to as sources) that require air permits are now reviewed by Cleaner Air Oregon as part of obtaining a permit. A new facility is one that needs to be built or is part of an existing source that has moved to a new location.

Eight of the approximately 102 facilities identified in the 2020 TRI as unpermitted were estimated to emit amounts of a chemical or chemicals that were noticeably higher than others. To be included in the list below, a non-metal had to be emitted at greater than 250 pounds, and a metal that was emitted at any amount. Di(ethylhexyl) phthalate was included because it is an uncommon TRI chemical and seems to be trending upward at the facility shown below in Marion County. Facilities located in Lane County are under the jurisdiction of the Lane Regional Air Protection Agency (LRAPA) and are not listed here. Since all TRI chemicals have some type of health effect, identifying the nonpermitted facilities emitting TRI chemicals may lead to DEQ requiring these facilities to obtain air permits, so that their emissions can be monitored on a regular basis and emission controls implemented to protect human health, if needed.

Highline Warren – Albany, Albany, Linn County

1,752 pounds Methanol

Brenntag Pacific Inc., Portland, Multnomah County

904 pounds Methanol

Cascade Columbia Distribution, Sherwood, Washington County

645 pounds Hydrogen fluoride

610 pounds Nitric acid

Benchmade Knife Co., Oregon City, Clackamas County

8 pounds Chromium and chromium compounds

M-D Building Products Inc./Loxscreen Co. Inc., Woodburn, Marion County

19 pounds Antimony

9 pounds Barium

58 pounds Di(2-ethylhexyl)phthalate

9 pounds Zinc

Facilities which were identified in the 2020 TRI as being unpermitted, but are currently (as of December 2022) permitted or undergoing permitting include:

- **Becklin Holdings Inc., Grants Pass, Jackson County**
6,627 pounds Styrene
This facility was issued an air permit in May 2022.
- **Ultimate RB, McMinnville, Yamhill County**
409 pounds Diisocyanates.
This facility is currently (as of December 2022) going through the air permitting process.
- **Orenco Systems, Inc., Roseburg, Douglas County**
The TRI has identified Orenco Systems, Inc. as a nonpermitted source. However, this facility is comprised of three different locations which are all regulated under the same Oregon DEQ air permit. Large amounts of styrene emissions (more than 10,000 pounds) and smaller amounts of dicyclopentadiene (greater than 700 pounds) are emitted by this facility.

5.0 Conclusions of DEQ review of 2020 TRI data

Based on the information above, some overarching conclusions are presented below for DEQ's review and summarization of TRI 2020 data for Oregon.

The top 10 most highly-emitted TRI chemicals in 2018, 2019, and 2020 include the same 10 chemicals, including *ammonia, methanol, hydrochloric acid, hydrogen sulfide, acetaldehyde, methyl isobutyl ketone, formaldehyde, styrene, xylenes, and nitric acid*. This information is available in [Table 7](#). These 10 chemicals are being emitted by facilities that are being reviewed and regulated under the Cleaner Air Oregon Program. The goal is to decrease emissions of these chemicals from these facilities.

Some of the top 20 most highly-emitted TRI chemicals are also in the top 20 for cancer weighting and/or noncancer weighting. These include ammonia, chlorine dioxide, formaldehyde, hydrochloric acid, hydrogen fluoride, hydrogen sulfide, and trichloroethylene. These chemicals are of more concern than, for example, methanol, in terms of relative toxicity.

Millions of pounds of ammonia are being emitted by the Dyno Nobel St. Helens Plant each year, located in Deer Island in Columbia County. This facility is located in a sparsely-populated area of the state, without many nearby human receptors. Ammonia is a moderately toxic noncarcinogenic chemical that causes eye irritation and adverse effects to the respiratory system, although the effects are mild. DEQ is aware of the high ammonia emissions. The facility has a state air permit and is also on CAO's facility call-in list in the Group 3 category.

Because most metals are highly toxic and some are carcinogenic, facilities emitting them are always of concern to DEQ. These facilities emitted potentially concerning amount of some TRI metals in 2020:

- **Arsenic** (19 pounds) was estimated to be emitted entirely (100%) by Douglas County Forest Products located in Roseburg, Douglas County (Group 3).
- **Cobalt and cobalt compounds** (394 pounds) were estimated to be emitted almost entirely (95%) by Orchid Orthopedic Solutions Oregon Inc., located in Oregon City, Clackamas County. This facility was also estimated to emit 30% of the total amount of **chromium and chromium compounds** recorded statewide (563 pounds) (Group 2).
- The Boeing Company of Portland, located in Portland, Multnomah County was estimated to emit 37% (328 pounds) of the **nickel and nickel compounds** statewide in (Group 2.)

Each of these three facilities has a DEQ air permit and is on the CAO call-in list of facilities that will need to go through a toxic air contaminant risk assessment process with CAO. This means that their metals emissions are being overseen by DEQ.

In addition, the top ten TRI reporters in Oregon in 2020 – that is, the ten facilities emitting the highest amounts of multiple TRI chemicals – were identified.

Unpermitted facilities emitting toxic air contaminants were identified by DEQ review of the TRI data. One facility in particular, Ultimate RB located in McMinnville, Yamhill County, which had a TRI emissions estimate of 409 pounds of diisocyanates in 2020, immediately caught DEQ's attention. CAO is currently working with DEQ air quality permitting staff to address these emissions using regulatory requirements.

Additional information from EPA on the 2020 TRI data for Oregon and other states is available on [EPA's website](#).

Contact

If you have specific questions for DEQ or would like this data in another format, please contact Sue MacMillan, Air Toxics Science and Policy Analyst, at 503-875-7741 or susan.macmillan@deq.oregon.gov.

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