



September 1, 2023

Oregon Department of Environmental Quality
Submitted electronically via Oregon DEQ's website:
<https://www.deq.state.or.us/adu>

Dear DEQ:

Intel is submitting this air toxic emissions inventory (ATEI) as part of the Type 4 Permit Application Submittal as required by the Oregon Department of Environmental Quality (OAR 340-216-0040(3)). This letter is being submitted with the Form AQ520 which we have completed based on the most recent data and identified information from the preparation of each substance identified on DEQ's spreadsheet for the Gordon Moore Park at Ronler Acres and Aloha facilities but has not attempted to expand beyond those substances listed in preparing this emissions inventory. This letter explains the approach taken in developing the values in the reporting form and clarifies elements of our emissions inventory.

Best Available Data Employed

Intel relied on what we considered to be the most representative, available emissions information in preparing this inventory. No testing was performed specific to this emissions inventory. Better information may become available in the future and Intel reserves the right to amend this inventory at any time. As such, this inventory could be revised at any time and should not be used for regulatory purposes.

Engineering Judgment Applied

Intel has applied best engineering judgment to identify what constitutes the most precise we information. Where appropriate, we may have deviated from using the range of source we results if in our best engineering judgment doing so provides a more accurate representation of our emissions. Similarly, we may not have relied on all available source test information if we believe that those data do not represent the most accurate estimate of our current emissions. Overall, we strove to utilize what we considered the most representative emission factors and data available us in completing this inventory.

Emission Inventory

The emission inventory has been categorized under five primary emission units, namely:

- 1) Semiconductor manufacturing process emission – EU-Process,
- 2) Emission from natural gas combustion <10 MMBtu·hr – EU-NG-1 Combustion
- 3) Emission from natural gas combustion 10-100 MMBtu·hr – EU-NG-2 Combustion

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- 4) Emission from diesel combustion with diesel particulate filters (emergency generators)– EU-RICE-1 and
 - 5) Emission from diesel combustion (emergency generators and fire pumps)– EU-RICE-2

Combustion Emissions Estimate Methodology

For emissions from Natural Gas ("NG") combustion, site meter readings were used to obtain NG usage, which were then multiplied by DEQ-provided¹ emission factors for natural gas combustion.

Emissions from diesel combustion were calculated using the run time meters on each emergency generator and fire pump to obtain the number of hours run in 2020. This number of hours for each emergency generator and fire pump was then used to calculate the diesel fuel used. The diesel fuel usage was used with the DEQ-provided¹ emission factor. A control efficiency for the diesel particulate filters (DPFs)² was applied to the EU-RICE-1 EU based on manufacturer information. A control efficiency of 85% was utilized for EU-RICE-1 particulate matter (including metals), and a control efficiency of 70% was applied to EU-RICE-1 hydrocarbons (VOCs).

Note that the DEQ-provided emission factors do not match the DEQ approved Emission Factors that are utilized in the air permit-required monthly twelve-month rolling air emissions calculations, annual emissions inventory reports, or other regulatory reports. Also, note that no diesel engine use B3 biodiesel.

Process Emissions Estimate Methodology

In preparing this inventory, we have relied on our tracked chemical purchase information and chemical manufacturing information provided by our suppliers. State and federal laws contain certain manufacturing limits for certain substances. We have also included "SDS" to communicate potential hazards. Where an ingredient is reflected as being present in a range, we have not taken the high end of the range as has been suggested as this would potentially provide a misleading result and could result in substantial over-reporting. We have instead used our best engineering judgment to estimate the amount of the constituent in the product.

Note that the DEQ-provided emission factors do not match the DEQ approved Emission Factors that are utilized in the air permit-required monthly twelve-month rolling air emissions calculations, annual emissions inventory reports, or other regulatory reports. Also, note that no diesel engine use B3 biodiesel.

¹ 2020 ATEI Combustion EF Search Tool accessed via <https://www.oregon.gov/deq/aq/air-toxics/Pages/Air-Toxics-Emissions-Inventory.aspx>

pollutant, emission factor information for Emissions Unit ID EU-Process is not included in this submittal.

Categorically Insignificant Activities

We have not reported emissions associated with any of the "categorically insignificant" activities specified by the Department. Where an activity was not specifically listed, but appeared similar in nature to a listed categorically insignificant activity, we have excluded emissions associated with that activity. For example, emissions from laboratory equipment, wastewater storage tanks, permitted discharges to wastewater treatment facilities are identified as categorically insignificant. Similarly, we have not included emissions from wastewater systems that are not identified in our current permit as emission unit.

Listed Substances

DEQ has specified that the Form AQ520 must be used. Intel has used that form. Where there was a disconnect between the CAS number and the chemical as identified, we reported based on the CAS number. Consistent with the EPA methodology used in completing the Toxic Release Inventory ("TRI"), where a "0" is listed in the spreadsheet for Emissions Unit ID EU-Process, emissions of that substance are believed to be less than 0.5 lbs/yr for substances that are not persistent, bioaccumulative, and toxic [PBT(s)].

Closed Systems and Articles

Intel has not attempted to quantify emissions from any systems that are normally closed or from any products that are considered articles (as that term is defined by EPA under the TRI program). For example, we have not attempted to quantify any emissions that could conceivably come from a closed refrigeration system that is not intended to vent to atmosphere. Attempting to quantify possible emissions from these sorts of systems and objects would be a tremendous effort and would likely be misleading.

Startup, Shutdown and Malfunctions Not Included

Intel has not attempted to quantify emissions from startup, shutdown or malfunction in preparing this inventory. Such emissions may occur, but reliable data characterizing the specific emissions profile during startup, shutdown and malfunction are either not available or not reliable. Lacking reliable, publicly available emission factors for such events, our best engineering judgment is that they should not be included at this time in our inventory.

This cover letter is included within the Form AQ520 within the tab entitled "Facility Note".

² Table C-1 of "Draft Recommended Procedures for Conducting TACRRA" accessed via https://www.oregon.gov/deq/aq/air/Documents/CIO_HR4Procedures.pdf

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Facility Information	
Facility Name	Intel Corporation (Aloha / Ronler Acres)
Facility Address	3585 SW 198th Avenue / 2501 NE Century Boulevard
City	Aloha / Hillsboro
Zip Code	97007 / 97124
Source Number (for existing sources)	34-2681-ST-01
Facility Contact	Wes Lund
Phone Number	971-610-4009

INSTRUCTIONS:

- Toxic Emissions Unit and Stack/Fugitive ID: use IDs
- Activity Units/Type: where possible, maintain consistency
- Max Daily Activity: for semi-continuous/batch processes
process and/or maintenance, that would account for the peak activity
- Actual: values should be based on the last full year sources
- Capacity: maximum activity value achievable with 100% utilization
- Requested PTE: values that a source is requesting "Capacity".

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INSTRUCTIONS:

- CAS or DEQ ID: either use the drop-down provided or simply cut and paste each pollutant CAS number or DEQ ID (see DEQ Pollutant List Worksheet) emitted by the facility.
- Chemical Name: If a CAS number or DEQ ID is entered in Column B, Column C would perform a lookup from the DEQ Air Toxics List; alternatively, simply cut and paste the chemical names that correspond to the CAS numbers listed in Column B if applicable.
- Emissions: Enter the total emissions capture and removal process efficiencies applicable to each individual pollutant.
- EF Values: provide emission factors for Annual and Daily Max Conditions; a Annual and Daily Max DEQ ID values are equivalent; please enter value in Annual (Column F).
- Emission Factor Information/Reference Notes: provide EF references (e.g. Source Tests, AP-42, Engineering Estimates, etc) as well as any additional notes (e.g. Control

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INSTRUCTIONS:

- **Toxic Emissions Unit and Stack/Fugitive ID:** use IDs consistent with permit identifiers if applicable.
- **Emission Units or Activity Description:** where possible, maintain consistency with permitted/reported Units/Type.
- **Material Name:** this is the commercial name that is provided on the manufacturer's SDS.
- **Material Waste:** this category should be used to account for all waste material shipped off-site, lost to drain, or incorporated into products.
- **Max Daily Activity:** for semi-continuous/batch processes this value should account for co-occurring activities, process and/or manufacturing activity which would result in the maximum amount of emissions for this activity.
- **Actual:** values should be based on the last full year reported to DEQ, or estimate of normal activity (new sources).
- **Capacity:** maximum activity achievable with 100% operational up-time for this activity.
- **Requested PTE:** values that a source is requesting to be permitted on that differ from "Actuals" and "Capacity".

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Emissions Unit/Product Information				Stack/Fugitive Information		Material Usage						Material Waste					
Toxics Emissions Unit ID	Emission Unit or Activity Description	Material Name	Manufacturer	Emission Type (e.g. Point or Fugitive)	Stack or Fugitive ID	Annual - Chronic [lb/year]			Max Daily - Acute [lb/day]			Annual - Chronic [lb/year]			Max Daily - Acute [lb/day]		
						Actual	Requested PTE	Capacity	Actual	Requested PTE	Capacity	Actual	Requested PTE	Capacity	Actual	Requested PTE	Capacity
TEU-Booth TEU-Booth	Widget Paint Booth - atomizer spray guns (EXAMPLE) Widget Paint Booth - atomizer spray guns (EXAMPLE)	Widget Paint-A Widget Paint-B	Widget Paint Co. Widget Paint Co.	Point Point	ST-4 ST-4	12,000 950	14,000 1200	20,000 1500	36 5	40 10	52 15	2000 15	2600 30	5000 40	5 0.5	7 1	14 2

INSTRUCTIONS:

- Material Name: must be consistent with Material Name on "Material Balance Activities" worksheet Column C.
- CAS or DEQ ID: either use the drop-down provided or simply cut and paste each pollutant CAS number or DEQ ID (see the DEQ Pollutant List worksheet) entered by reference to the TEU.
- Chemical Name: if a CAS Number or DEQ ID is entered in Column C, Column D should perform a lookup from the DEQ Air Toxics list; alternatively, simply cut and paste the chemical names that correspond to the CAS numbers/DEQ ID in Column C if applicable.
- Control Efficiency: enter the pollutant specific control efficiency - this should include all capture and removal process efficiencies applicable to each individual pollutant.
- Percent Composition: provide raw percent composition values for the pollutant as reported by supporting manufacturer documentation.
- Reference/Notes: provide references and notes for control efficiencies and/or any adjustments applied to material usage data via Material Waste (Columns M-R) on the "Material Balance Activities" worksheet.
- Calculated Emissions: follow guidance in "Form Instructions" worksheet for specific formulas.

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Toxics Emissions Unit ID	Material Name	Pollutant Information				Emissions Data	Calculated Emissions							
		CAS or DEQ ID	Chemical Name	Control Efficiency	Percent Composition		Reference/Notes	Annual Emissions - Chronic [lb/day]			Total Daily Emissions - Acute [lb/day]			
								Actual	Requested PTE	Capacity	Actual	Requested PTE	Capacity	
TEU-BOOTH	Widget Paint-A	67-56-1	Isobutanol	0.00%	35.00%			3500	3980	5250	10.85	11.55	13.3	
TEU-BOOTH	Widget Paint-A	100-40-3	Vinyl cyclohexene	0.00%	40.00%			4800	5472	7200	14.88	15.84	16.93	
TEU-BOOTH	Widget Paint-A	18540-29-8	Chromium VI, chromate and dichromate particulate	99.72%	5.00%		Includes Transfer Efficiency (72%) and Filter Re	1.4	1.598	2.1	0.00454	0.00462	0.00532	
TEU-BOOTH	Widget Paint-B	90-43-7	2-Phenylphenol	0.00%	0.50%			4,675	5,85	7.3	0.0225	0.045	0.065	
TEU-BOOTH	Widget Paint-B	50-00-0	Formaldehyde	0.00%	70.00%			654.5	819	1022	3.15	6.3	9.1	
TEU-BOOTH	Widget Paint-B	7440-36-0	Antimony and compounds	99.72%	5.00%		Includes Transfer Efficiency (72%) and Filter Re	0.1309	0.1639	0.2044	0.00063	0.00126	0.00192	