CLEANER AIR OREGON—
RISK ASSESSMENT WORK PLAN

ENTEK INTERNATIONAL LLC
LEBANON, OREGON

Prepared for
OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY
CLEANER AIR OREGON AIR TOXICS PROGRAM
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ACRONYMS AND ABBREVIATIONS

CAO	Cleaner Air Oregon
DEQ	Oregon Department of Environmental Quality
ENTEK	ENTEK International LLC
Title V permit	Title V Permit No. 22-6024-TV-01
the facility	ENTEK's manufacturing facility located in Lebanon, OR
g/s	gram(s) per second
MFA	Maul Foster & Alongi, Inc.
OAR	Oregon Administrative Rule
RAL	risk action level
RAWP	Level 3 Risk Assessment Work Plan
RBC	risk-based concentration
TAC	toxic air contaminant
TEU	toxic emissions unit
ug/m³	microgram(s) per cubic meter

1 INTRODUCTION

ENTEK International LLC (ENTEK) owns and operates a polymer-based film manufacturing facility ("the facility") located at 250 Hansard Avenue in Lebanon, Oregon. The facility currently operates under Title V Permit No. 22-6024-TV-01 (the "Title V permit") issued by the Oregon Department of Environmental Quality (DEQ) on December 21, 2018.

Maul Foster & Alongi, Inc. (MFA) was retained by ENTEK to assist with the Cleaner Air Oregon (CAO) permitting process for the facility. ENTEK was "called-in" to the CAO program by the DEQ on March 4, 2019. ENTEK submitted a toxic air contaminant (TAC) emissions inventory to the DEQ on June 3, 2019. A final emissions inventory was approved by the DEQ on January 18, 2022. ENTEK submitted a modeling protocol for Level 3 risk assessment to the DEQ on February 17, 2022. ENTEK intends to conduct a Level 3 Risk Assessment to estimate the potential excess cancer risk and chronic and acute noncancer risk (expressed numerically as the chronic and acute hazard index) impacts from the facility for comparison to the applicable risk action levels (RALs) shown in Oregon Administrative Rule (OAR) 340-245-8010 Table 1. As stated in OAR 340-245-0030(1)(c), a Level 3 Risk Assessment Work Plan (RAWP) must be submitted to the DEQ no later than 60 days after receiving DEQ approval of the CAO emission inventory. As the approval occurred on January 18, 2022, the RAWP was timely submitted on March 18, 2022 and revised in response to subsequent DEQ comments received August 2, 2022.

The remainder of this RAWP outlines the proposed methodology for completing the Level 3 Risk Assessment for the facility and presents specific information required by OAR 340-245-0210(2). In order to avoid duplicating efforts, CAO modeling protocol sections relevant to the RAWP are directly referenced where applicable.

2 CONCEPTUAL SITE MODEL

Sections 2 and 3 of the CAO modeling protocol discusses the facility location, process description, toxic emission units (TEUs), and TAC emission estimates to satisfy the requirements set forth under OAR 340-245-0210(2). Exposure locations are discussed in more detail in Section 3 below. Dispersion model IDs are presented in Tables 3-1 through 3-3 of the CAO modeling protocol with applicable DEQ-approved annual and daily TAC emission rates for Significant TEUs.

2.1 Gas Combustion TEUs

The specific procedures for assessing the risk of each TEU are dependent on the TEU designation per OAR 340-245-0050(4). Per OAR 340-245-0050(5)(a), "at each exposure location, risk must be reported as two values; (A) The risk from TACs emitted from such combustion of natural gas, propane, liquefied petroleum gas, pretreated landfill gas, and pretreated digester gas or biogas; and (B)

the risk from all other TAC emissions." The following TEU is the only source of natural gas-fired combustion emissions (shown with the corresponding dispersion model ID in parentheses) and will be assessed as a Gas Combustion TEU:

- Cleaver Brooks boiler natural gas-fired combustion (BOILER-NG)

DEQ-approved annual and daily TAC emission rates for the BOILER-NG unit are provided in Table 2-1 (attached). ENTEK will separately determine risk at each exposure location for the Gas Combustion TEU.

2.2 Non-Exempt TEUs

A Level 3 Risk Assessment will be conducted that includes all facility TEUs other than those qualifying under the gas combustion TEU exemption. This assessment will be used to determine whether the facility exceeds the source permit RAL (i.e., de minimis source determination) per OAR 340-245-0050(7). After completion of the Level 3 Risk Assessment, if it is determined that one or more of the assessed cancer or noncancer facility risks exceed the source permit RAL, ENTEK will determine which, if any, TEUs at the facility may be collectively grouped into the Aggregated TEU category. Aggregated TEU "means all of a source's TEUs that are identified by an owner or operator with total cumulative risk less than the Aggregate TEU Level" per OAR 340-245-0020(8). For existing sources, the cancer Aggregate TEU RAL is equal to an excess lifetime cancer risk of 2.5-in-one-million, and the noncancer Aggregate TEU RAL is equal to a hazard index of 0.1, as established under OAR 340-245-8010 Table 1.

Cancer and noncancer risks will be reported separately for Gas Combustion, Aggregated TEUs (if any), and Significant TEUs. Risks associated with Aggregated TEUs, if any TEUs are proposed as such, will be compared with the applicable Aggregated TEU RALs. For compliance demonstration, only calculated risks associated with Significant TEUs will be compared with the applicable RALs.

3 EXPOSURE ASSESSMENT

3.1 Land-Use Zoning Classification—Exposure Types

Section 4 of the CAO modeling protocol provides details relevant to the exposure assessment, including the dispersion modeling approach to estimate TAC concentrations at exposure locations and the corresponding exposure type classifications to satisfy the requirements under OAR 340-245-0210(2)(b).

3.2 Exposure Pathways

A Level 3 Risk Assessment is proposed in this RAWP. It is assumed that cancer and noncancer risk (i.e., chronic and acute hazard index) resulting from facility TEUs will not have additional exposure pathways (i.e., ingestion or injection) other than those already accounted for in each published risk-

based concentration (RBC). Moreover, based on a review of land-use zoning classifications and aerial imagery, there are no known locations that might present additional exposure pathways, such as a local lake where fish consumption might present an ingestion pathway, or a nearby farm where subsistence farming practices may occur. Since no additional exposure pathways have been observed, a Level 4 Risk Assessment is not warranted.

4 RISK CHARACTERIZATION

4.1 Risk-Based Concentrations

Excess cancer risk and chronic and acute noncancer risk will be assessed using the most current RBCs available as shown in OAR 340-245-8010 Table 2. The TACs from the approved CAO emissions inventory and corresponding RBCs to be included in the Level 3 Risk Assessment are presented in Table 4-1 (attached).

4.2 Risk Estimates

As described in section 4.4 of the CAO modeling protocol, a single dispersion model will be executed using a unit emission rate of 1 gram per second (g/s) for each TEU for annual (chronic cancer and noncancer) assessments, and for the 24-hour (acute) assessment for the Gas Combustion TEU. The maximum modeled unit concentration in micrograms per cubic meter (ug/m^3) at each modeled receptor for the annual averaging period will be considered a modeled "dispersion factor" in units of ug/m^3 per g/s. Risk estimates will be determined for each TEU by multiplying this dispersion factor by the TAC-specific emission rate (g/s) presented in the approved CAO emission inventory to produce a maximum predicted model concentration for a specific TAC. The maximum predicted model concentration for a specific TAC will be divided by the appropriate RBC. The resulting risk for all TACs will be summed for each Significant TEU. For all Significant TEUs at each exposure location, the calculated risks will be summed to obtain the total excess cancer risk and the total chronic noncancer hazard index.

For the 24-hour (acute) assessment, MFA developed risk equivalent emission rates for each Significant TEU. The proposed risk equivalent emission rates were calculated by dividing the individual TAC emission rate for each Significant TEU by their respective acute RBC. The resulting value for each TAC was then summed together to create a total risk equivalent emission rate for the Significant TEU. This process was repeated for each Significant TEU at the facility. The risk equivalent emission rates will be modeled for the 24-hour averaging period to assess the cumulative acute risk from the facility. The proposed risk equivalent emission rates for the Significant TEUs are provided in Table 3-3 of the CAO modeling protocol.

4.2.1 Example Calculation—Level 3 Risk Assessment

Example calculations for estimating excess cancer risk and chronic noncancer hazard index for a single proposed exposure location are presented in Equation 1 and Equation 2 per OAR 340-245-0210(2)(c).

Equation 1.

$$\text{Excess Cancer Risk (chances-in-a-million)} = \sum \frac{(\text{TAC annual emission rate [g/s]}) \times \left(\text{proposed TEU dispersion factor } \left[\frac{\mu g/m^3}{g/s}\right]\right)}{(\text{applicable RBC at exposure location [ug/m}^3\text{]})}$$

Equation 2.

$$\text{Chronic Noncancer Hazard Index} = \sum \frac{(\text{TAC annual emission rate [g/s]}) \times \left(\text{proposed TEU dispersion factor } \left[\frac{\mu g/m^3}{g/s}\right]\right)}{(\text{applicable RBC at exposure location [ug/m}^3\text{]})}$$

The total facility excess cancer risk and chronic noncancer hazard index will be derived by summing each individual TAC risk contribution at each proposed exposure location.

The example calculation for estimating the acute noncancer hazard index for a single proposed exposure location is presented in Equation 3.

Equation 3.

$$\text{Acute Noncancer Hazard Index} = \sum \left(\text{TEU risk equivalent emission rate } \left[\frac{g/s}{ug/m^3}\right]\right) \times \left(\text{proposed TEU dispersion factor } \left[\frac{\mu g/m^3}{g/s}\right]\right)$$

The total facility acute noncancer hazard index will be derived by summing each individual Significant TEU's risk contribution at each proposed exposure location.

4.3 Revised Noncancer Risk Action Levels

The CAO rules identify certain TACs that may have developmental, reproductive, respiratory, or other noncancer severe health effects and set RALs for these TACs. The calculation of the risk determination ratio is required when facilities emit a mixture of TACs assigned noncancer TBACT RALs of both a hazard index of 3 and a hazard index of 5, as identified in OAR 340-245-8010, Table 2. The risk determination ratio formula under OAR 340-245-0200(5) is presented below in Equation 4.

Equation 4.

$$\text{Risk Determination Ratio} = \frac{\text{Risk}_{\text{HI3}}}{3} + \frac{\text{Risk}_{\text{HI5}}}{5}$$

As shown in the approved CAO emissions inventory, TAC emissions from the facility are comprised of a mixture of TACs with assigned hazard indices of 3 and 5 per OAR 340-245-8010 Table 2. As a result, if the estimated facility chronic and acute noncancer risk is greater than the Community Engagement RAL, the risk determination ratio will be determined per Equation 4.

5 UNCERTAINTY ANALYSIS

Although the proposed Level 3 Risk Assessment will be conducted using the most accurate and readily available information, there are various uncertainties associated with the proposed risk assessment. Per OAR 340-245-0210(2)(d), known quantitative and qualitative uncertainties with the proposed Level 3 Risk Assessment include, but may not be limited to, the following:

Acute Assessments:

- To assess acute noncancer risk (i.e., acute hazard index), the full 24-hour exposure duration will be assumed. While it is unlikely a person would be at most of the proposed exposure locations for 24 consecutive hours, this method will provide a worst-case potential exposure duration for an individual at these locations. For example, if an employee at an identified acute exposure location only works a single, eight-hour shift, the exposure would only be a third of what is being assumed in the proposed Level 3 Risk Assessment. **Hence, the proposed Level 3 Risk Assessment may overestimate acute noncancer risk due to the 24-hour exposure duration assumption for chemicals with RBCs based on TRVs with an exposure period of 24-hours or more. Conversely, the proposed Level 3 Risk Assessment may underestimate acute noncancer risk for TRVs with an exposure period of less than 24 hours because the model is executed for the 24-hour averaging period.**

- The Level 3 Risk Assessment will be conducted assuming each TEU at the facility is operating at maximum design capacity for 24 hours, simultaneously. For example, the boiler typically does not need to operate at maximum operational capacity to satisfy the steam requirements of the facility. It is highly unlikely that all TEUs at the facility will simultaneously operate at their maximum capacity for a 24-hour period. **Therefore, the proposed Level 3 Risk Assessment likely overestimates acute noncancer risk due to unrealistic operating conditions.**

- The Level 3 Risk Assessment relies on computer modeling and site-specific meteorological data to predict potential ambient concentrations, but not actual ambient air monitoring data. ORS 468A.337 recognizes that ambient air monitoring can be more accurate for determining actual exposure than computer modeling. In November and December 2019, the U.S. Environmental Protection Agency conducted ambient monitoring with two concentric rings of monitors encircling the ENTEK facility. November and December were chosen because they are the months with the worst dispersion characteristics. EPA's monitoring documented that the ambient levels of TCE were de minimis with most readings below the detection limit. **Therefore, the Level 3 Risk Assessment likely overestimates ambient concentrations due to conservative assumptions incorporated into the model and may suggest unrealistic exposure levels.**

- The Level 3 Risk Assessment relies on modeling using a one-year period of hourly meteorological data. Some meteorological conditions, which may only occur a few days or less in a one-year period, result in worst-case dispersion characteristics. It is extremely unlikely that these infrequent meteorological conditions would occur at the same time that the facility is simultaneously operating all TEUs at maximum capacity. **Therefore, the proposed Level 3 Risk Assessment likely overestimates acute noncancer risk because of the improbability of facility operations at maximum capacity aligning with worst-case meteorological conditions.**

- The rat study used to support the TCE toxicity reference value used 22 days of exposure during gestation to evaluate the potential for fetal cardiac malformation in rats. The study was not designed to identify the time of exposure required to cause an adverse effect.

Cancer and Chronic Noncancer Assessments:

- The RBCs developed by the DEQ for excess cancer risk and chronic noncancer risk assume a 70-year exposure duration for 24 hours per day. It is unlikely that a person would remain at the same residence or in areas potentially impacted by emissions covered by the CAO program for 70 consecutive years for 24 hours per day. The risk assessments also account for a person being exposed to the local facility emission rate for the entire exposure duration (i.e., 70 years). **Therefore, the proposed Level 3 Risk Assessment will overestimate cancer and chronic noncancer risk due to the unrealistic exposure duration assumption.**

All Assessments:

- Only excess cancer risk and chronic and acute noncancer hazard index from TACs that have RBCs published by the DEQ will be assessed. Table 5-1 (attached) presents a list of the TACs emitted from the facility TEUs that do not have RBCs published by the DEQ. **As a result, the proposed Level 3 Risk Assessment may not accurately assess cancer and/or noncancer risk associated with those TACs that do not yet have an associated RBC. However, the development of RBCs generally has a level of conservatism that may overestimate cancer and/or noncancer risk from TACs with known RBCs.**

6 CLOSING

MFA looks forward to working with the DEQ throughout the CAO process. If there are any questions or comments regarding this modeling protocol, please contact Andrew Rogers at (503) 407-6406 or at arogers@maulfoster.com.

LIMITATIONS

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

TABLES

Table 2–1
DEQ-Approved TAC Emission Rates for Gas Combustion TEUs
ENTEK International LLC — Lebanon, Oregon

Toxic Air Contaminant	CAS	RBC? (Yes/No)	DEQ-Approved Emission Rates (BOILER-NG)			
			Annual		Daily	
			(lb/yr) [1]	(g/s) [a]	(lb/day) [1]	(g/s) [b]
Acetaldehyde	75-07-0	Yes	2.30	3.3E-05	6.7E-03	3.5E-05
Acrolein	107-02-8	Yes	2.00	2.9E-05	5.8E-03	3.0E-05
Benzene	71-43-2	Yes	4.30	6.2E-05	0.012	6.5E-05
Ethylbenzene	100-41-4	Yes	5.11	7.4E-05	0.015	7.8E-05
Formaldehyde	50-00-0	Yes	9.11	1.3E-04	0.026	1.4E-04
Hexane	110-54-3	Yes	3.41	4.9E-05	9.9E-03	5.2E-05
Benzo(a)pyrene	50-32-8	Yes	8.9E-04	1.3E-08	2.6E-06	1.4E-08
Molybdenum trioxide	1313-27-5	No	1.22	1.8E-05	3.5E-03	1.9E-05
Ammonia	7664-41-7	Yes	2,371	0.034	6.88	0.036
Polycyclic aromatic hydrocarbons (PAHs)	401	Yes	0.074	1.1E-06	2.2E-04	1.1E-06
Naphthalene	91-20-3	Yes	0.22	3.2E-06	6.5E-04	3.4E-06
Toluene	108-88-3	Yes	19.6	2.8E-04	0.057	3.0E-04
Xylenes (mixed isomers)	1330-20-7	Yes	14.6	2.1E-04	0.042	2.2E-04
Arsenic	7440-38-2	Yes	0.15	2.1E-06	4.3E-04	2.3E-06
Barium	7440-39-3	No	3.26	4.7E-05	9.5E-03	5.0E-05
Beryllium	7440-41-7	Yes	8.9E-03	1.3E-07	2.6E-05	1.4E-07
Cadmium	7440-43-9	Yes	0.82	1.2E-05	2.4E-03	1.2E-05
Chromium VI	18540-29-9	Yes	1.04	1.5E-05	3.0E-03	1.6E-05
Cobalt	7440-48-4	Yes	0.062	9.0E-07	1.8E-04	9.5E-07
Copper	7440-50-8	Yes	0.63	9.1E-06	1.8E-03	9.6E-06
Lead	7439-92-1	Yes	0.37	5.3E-06	1.1E-03	5.6E-06
Manganese	7439-96-5	Yes	0.28	4.1E-06	8.2E-04	4.3E-06
Mercury	7439-97-6	Yes	0.19	2.8E-06	5.6E-04	2.9E-06
Nickel	7440-02-0	Yes	1.56	2.2E-05	4.5E-03	2.4E-05
Selenium	7782-49-2	Yes	0.018	2.6E-07	5.2E-05	2.7E-07
Vanadium	7440-62-2	Yes	1.70	2.5E-05	4.9E-03	2.6E-05
Zinc	7440-66-6	No	21.5	3.1E-04	0.062	3.3E-04

NOTES:

RBC = risk based concentration.

(a) Emission rate (g/s) = (annual emissions estimate [lb/yr]) x (453.592 g/lb) x (yr/8,760 hrs) x (hr/3,600 s)

(b) Emission rate (g/s) = (daily emissions estimate [lb/day]) x (453.592 g/lb) x (day/24 hrs) x (hr/3,600 s)

REFERENCE:

[1] Emissions estimate based on TAC emissions inventory.

Table 4–1
Applicable Risk-Based Concentrations
ENTEK International LLC — Lebanon, Oregon

Toxic Air Contaminant	CAS	RBC? (Yes/No)	Noncancer TBACT RAL [1]	Risk-Based Concentration [1] (ug/m^3)						
				Residential Chronic		Non-Residential Chronic				Acute
				Cancer	Noncancer	Child Cancer	Child Noncancer	Worker Cancer	Worker Noncancer	Noncancer
Acetaldehyde	75-07-0	Yes	HI3	0.45	140	12.0	620	5.50	620	470
Acetone	67-64-1	Yes	HI3	--	31,000	--	140,000	--	140,000	62,000
Acrolein	107-02-8	Yes	HI5	--	0.35	--	1.50	--	1.50	6.90
Benzene	71-43-2	Yes	HI3	0.13	3.00	3.30	13.0	1.50	13.0	29.0
2-Butanone (Methyl ethyl ketone)	78-93-3	Yes	HI3	--	5,000	--	22,000	--	22,000	5,000
1,2-Epoxybutane	106-88-7	Yes	HI5	--	20.0	--	88.0	--	88.0	--
1,3-Butadiene	106-99-0	Yes	HI3	0.033	2.00	0.86	8.80	0.40	8.80	660
Cyclohexane	110-82-7	Yes	HI3	--	6,000	--	26,000	--	26,000	--
1,1-Difluoroethane	75-37-6	Yes	HI5	--	40,000	--	180,000	--	180,000	--
Ethylbenzene	100-41-4	Yes	HI3	0.40	260	10.0	1,100	4.80	1,100	22,000
Ethylene glycol monobutyl ether	111-76-2	Yes	HI3	--	82.0	--	360	--	360	29,000
Formaldehyde	50-00-0	Yes	HI3	0.17	9.00	4.30	40.0	2.00	40.0	49.0
Hexane	110-54-3	Yes	HI3	--	700	--	3,100	--	3,100	--
Benzo(a)anthracene	56-55-3	Yes	--	2.1E-04	--	7.8E-03	--	0.015	--	--
Benzo(a)pyrene	50-32-8	Yes	HI3	4.3E-05	2.0E-03	1.6E-03	8.8E-03	3.0E-03	8.8E-03	2.0E-03
Benzo(b)fluoranthene	205-99-2	Yes	--	5.3E-05	--	2.0E-03	--	3.8E-03	--	--
Benzo(g,h,i)perylene	191-24-2	Yes	--	4.7E-03	--	0.17	--	0.34	--	--
Benzo(k)fluoranthene	207-08-9	Yes	--	1.4E-03	--	0.052	--	0.10	--	--
Chrysene	218-01-9	Yes	--	4.3E-04	--	0.016	--	0.030	--	--
Dibenzo(a,h)anthracene	53-70-3	Yes	--	4.3E-06	--	1.6E-04	--	3.0E-04	--	--
Fluoranthene	206-44-0	Yes	--	5.3E-04	--	0.020	--	0.038	--	--
Fluoride	239	Yes	HI3	--	2.30	--	20.0	--	20.0	240
Indeno(1,2,3-c,d)pyrene	193-39-5	Yes	--	6.1E-04	--	0.022	--	0.043	--	--
Isopropyl alcohol	67-63-0	Yes	HI3	--	200	--	880	--	880	3,200
Methanol	67-56-1	Yes	HI3	--	4,000	--	18,000	--	18,000	28,000
Methyl isobutyl ketone (MIBK, Hexone)	108-10-1	Yes	HI3	--	3,000	--	13,000	--	13,000	--
Naphthalene	91-20-3	Yes	HI3	0.029	3.70	0.76	16.0	0.35	16.0	200
OCDD	3268-87-9	Yes	HI3	3.4E-06	4.2E-04	3.0E-04	0.085	1.4E-04	0.085	--
Propylene	115-07-1	Yes	HI5	--	3,000	--	13,000	--	13,000	--
Tetrachloroethene (Perchloroethylene)	127-18-4	Yes	HI3	3.80	41.0	100	180	46.0	180	41.0
1,1,1-Trichloroethane	71-55-6	Yes	HI3	--	5,000	--	22,000	--	22,000	11,000
Toluene	108-88-3	Yes	HI3	--	5,000	--	22,000	--	22,000	7,500
Trichloroethene (TCE, Trichloroethylene)	79-01-6	Yes	HI3	0.20	2.10	3.50	9.20	2.90	9.20	2.10
1,2,3-Trimethylbenzene	526-73-8	Yes	HI3	--	60.0	--	260	--	260	--
Xylenes (mixed isomers)	1330-20-7	Yes	HI3	--	220	--	970	--	970	8,700
Antimony	7440-36-0	Yes	HI3	--	0.30	--	1.30	--	1.30	1.00
Arsenic	7440-38-2	Yes	HI3	2.4E-05	1.7E-04	1.3E-03	2.4E-03	6.2E-04	2.4E-03	0.20
Beryllium	7440-41-7	Yes	HI3	4.2E-04	7.0E-03	0.011	0.031	5.0E-03	0.031	0.020
Cadmium	7440-43-9	Yes	HI3	5.6E-04	5.0E-03	0.014	0.037	6.7E-03	0.037	0.030
Chromium VI	18540-29-9	Yes	HI3	3.1E-05	0.083	5.2E-04	0.88	1.0E-03	0.88	0.30
Cobalt	7440-48-4	Yes	HI3	--	0.10	--	0.44	--	0.44	--
Copper	7440-50-8	Yes	HI3	--	--	--	--	--	--	100
Lead	7439-92-1	Yes	HI3	--	0.15	--	0.66	--	0.66	0.15
Manganese	7439-96-5	Yes	HI3	--	0.090	--	0.40	--	0.40	0.30
Mercury	7439-97-6	Yes	HI3	--	0.077	--	0.63	--	0.63	0.60
Nickel	7440-02-0	Yes	HI3	3.8E-03	0.014	0.10	0.062	0.046	0.062	0.20
Selenium	7782-49-2	Yes	HI3	--	--	--	--	--	--	2.00
Vanadium	7440-62-2	Yes	HI3	--	0.10	--	0.44	--	0.44	0.80
Ammonia	7664-41-7	Yes	HI3	--	500	--	2,200	--	2,200	1,200
Hydrochloric acid	7647-01-0	Yes	HI3	--	20.0	--	88.0	--	88.0	2,100
Polycyclic aromatic hydrocarbons (PAHs)	401	Yes	--	4.3E-05	--	1.6E-03	--	3.0E-03	--	--

NOTES:

ug/m^3 = micrograms per cubic meter.

RAL = risk action level.

RBC = risk based concentration.

REFERENCE:

[1] See Oregon Administrative Rule 340-245-8010 Table 2.

Table 5–1
List of TACs With No Published Risk-Based Concentrations
ENTEK International LLC — Lebanon, Oregon

Toxic Air Contaminant	CAS	Risk-Based Concentration? [1] (Yes/No)
n-Butyl alcohol	71-36-3	No
t-Butyl acetate	540-88-5	No
Molybdenum trioxide	1313-27-5	No
Diethylene glycol	111-46-6	No
Acenaphthene	83-32-9	No
Acenaphthylene	208-96-8	No
Anthracene	120-12-7	No
Fluorene	86-73-7	No
2-Methylnaphthalene	91-57-6	No
Phenanthrene	85-01-8	No
Pyrene	129-00-0	No
Barium	7440-39-3	No
Phosphorus and Compounds	504	No
Zinc	7440-66-6	No

NOTES:

TAC = toxic air contaminant.

REFERENCES:

[1] See Oregon Administrative Rule 340-245-8010 Table 2.