CLEANER AIR OREGON—
LEVEL 1 RISK ASSESSMENT REPORT

THE WILLAMETTE VALLEY COMPANY, LLC

Prepared for

LANE REGIONAL AIR PROTECTION AGENCY

THE WILLAMETTE VALLEY COMPANY, LLC

May 12, 2022

Project No. M8006.64.001

MAUL
FOSTER
ALONGI

Prepared by
Maul Foster & Alongi, Inc.
6 Centerpointe Drive, Suite 360, Lake Oswego, OR 97035

CONTENTS

TABLES AND FIGURES

TABLES

FIGURES

ACRONYMS AND ABBREVIATIONS

CAO	Cleaner Air Oregon
g/s	gram per second
LRAPA	Lane Regional Air Protection Agency
MFA	Maul Foster & Alongi, Inc.
OAR	Oregon Administrative Rule
PMDI	polymeric methylene diphenyl diisocyanates
RBC	risk-based concentration
TAC	toxic air contaminant
TEU	toxic emissions units
the facility	wood filler, putty, and coating production facility in Eugene, Oregon
ug/m^3	microgram per cubic meter
WVCO	The Willamette Valley Company, LLC

1 INTRODUCTION

The Willamette Valley Company, LLC (WVCO) owns and operates a wood filler, putty, and coating production facility located at 586 and 660 McKinley Street in Eugene, Oregon (the facility). The facility operates under Simple Air Contaminant Discharge Permit No. 208935 issued by the Lane Regional Air Protection Agency (LRAPA) on March 2, 2017 and amended on November 7, 2017. On March 2, 2020, LRAPA provided written notice to WVCO that the facility was officially being called in to the Cleaner Air Oregon (CAO) permitting program.

WVCO retained Maul Foster & Alongi, Inc. (MFA) to assist the facility with each step of the CAO permitting process. On June 22, 2020, WVCO submitted a toxic air contaminant (TAC) emissions inventory to LRAPA for review and approval to satisfy the initial step of the CAO permit application process as specified in Oregon Administrative Rule (OAR) 340-245-0040(1). LRAPA completed their internal review and approved the TAC emissions inventory via letter dated December 22, 2021.

On January 21, 2022, WVCO submitted a modeling protocol to LRAPA that proposed performing a Level 1 Risk Assessment to satisfy the next step of the CAO permitting application process as specified in OAR 340-245-0030(1)(b). LRAPA reviewed and approved the modeling protocol submittal via a letter dated March 18, 2022.

As stated in the modeling protocol approval letter, WVCO must perform a Level 1 Risk Assessment and submit a modeling report summarizing the modeling inputs and results to LRAPA by no later than May 17, 2022. The remainder of this modeling report details the Level 1 Risk Assessment methodology and results, consistent with the requirements set forth under OAR 340-245-0050(8).

2 FACILITY DESCRIPTION

2.1 Facility Location

The facility is located in Eugene, Oregon, adjacent to Highway 99 and approximately 2 kilometers southwest of the Willamette River. The area immediately surrounding the facility is characterized by flat terrain, with heavy industrial use to the south, west, and north, and mixed commercial use to the east. An aerial image of the facility location is shown in Figure 2-1. The topography of the area immediately surrounding the facility is presented in Figure 2-2.

2.2 Process Description

The facility manufactures seven categories of finished products for the wood products industry: coatings, putty polyurethane fillings, patching resins, spikefast resin, plywood patching resin, and epoxies. Each of the finished products undergoes the same general manufacturing process steps.

Liquid-based raw materials are first combined into one or more mixing vessels where they are blended together in specific amounts based on customer specifications. In some cases, dry raw ingredients such as pigments are introduced into the mixing vessel. The mixed product is then filled into totes prior to being shipped offsite to the purchaser. The total number of raw ingredients varies based on the finished product being manufactured and the quantity of each ingredient will vary based on the individual client request.

Throughout the year, rail or tanker trucks deliver raw ingredients that are used in large quantities (i.e., ubiquitous among finished products) and are stored onsite in bulk storage tanks. These raw ingredients include polymeric methylene diphenyl diisocyanates (PMDI), waxes, and certain resins for coatings manufacturing. The waxes and resins are delivered via tanker truck and are unloaded into one of eight liquid bulk storage tanks located at the tank farm between the two manufacturing buildings.

Raw ingredients that are used less frequently are delivered in individual totes by truck and stored onsite until they are needed for a finished product. The liquid-based raw ingredients are kept in air-tight totes to prevent evaporative losses during storage. The dry raw ingredients are kept in closed sacks to prevent any contamination. When the raw ingredients are needed to prepare a finished product, the totes are moved via forklift and unloaded into the desired mixing vessel.

In total, there are 16 mixing vessels at the facility used to blend the seven categories of finished products. Generally, each individual mixing vessel is only used to blend one specific category of finished product. Seven mixing vessels are used for coatings manufacturing, three mixing vessels are used for polyurethane filling manufacturing, and two mixing vessels are used for patch fill manufacturing. Putties, spikefast resin, plywood patch resin, and epoxies each have their own designated mixing vessel where they are blended. For mixing vessels where dry raw ingredients may be added, a collection hood stationed above each vessel collects any dust generated during dry raw ingredient addition. Dust collected by these hoods is routed to one of three dust collectors, with one exhausting to atmosphere and the other two exhausting back into the manufacturing building.

A diesel-fired emergency generator rated at 150 kilowatts is kept at the facility for emergency power loss situations. The generator manufacturer requires that the engine be operated a minimum of once per year for maintenance and readiness testing purposes.

A process flow diagram outlining the manufacturing process is presented in Figure 2-3. A plot plan of the facility, including the locations of known sources of TACs, is presented in Figure 2-4.

3 EMISSION UNITS AND EMISSION ESTIMATES

Daily and annual TAC emission estimates for finished product manufacturing and process equipment considered to be toxic emissions units (TEUs) as defined in OAR 340-245-0020(59) were prepared by MFA and approved by LRAPA via letter dated December 22, 2021. The following subsections detail the identified TEUs at the facility and describe how these sources were represented in the Level 1 Risk Assessment.

3.1 Product Manufacturing

Because each of the finished product categories undergo the same general manufacturing process, TAC emissions were estimated using the same methodology for each category of finished product. TAC emissions were estimated for three distinct points in the manufacturing process for each product category: raw ingredient loading, surface evaporation from blending, and finished product filling. TAC emissions from each point in the process were combined to estimate a total emission rate for each category of finished product. Each of the three emission points occur inside either manufacturing building 1 or 2, depending on the category of product being manufactured. The two manufacturing buildings are identified in Figure 2-4.

The manufacturing buildings are generally enclosed, with no heating, ventilating, and air conditioning system actively venting air from the inside the buildings to atmosphere. However, both buildings do utilize passive roof vents and bay doors, which are opened during raw material delivery or finished product shipping. An overhead hood is installed directly above each mixing vessel and uses force draft ventilation to capture dust released during raw materials unloading.

WVCO estimates that the dust collectors capture 90 percent of any loss during dry material loading and collect 85 percent of the captured dust. Exhaust from dust collector #1 vents directly to atmosphere in a stack adjacent to manufacturing building 2, while exhaust from dust collectors #2 and #3 are routed back into manufacturing building 1. The forced draft ventilation above the vessels is expected to capture 100 percent of any vapor loss.

As a result of this configuration, TAC emissions from coating and putty manufacturing in building 1 were allocated to the fugitive building emission source representative of building 1 labeled as (**BUILDING_1**).

Vapor losses and 90 percent of solid-based TAC emissions from polyurethane fill patching resin, spikefast resin, plywood patching resin, and epoxies manufacturing were allocated to the exhaust stack for dust collector #1 labeled as (**BUILDING2-STK**). The remaining 10 percent of solid-based TAC emissions not captured by the dust collector were allocated to the building emission source labeled as (**BUILDING2-FUG**).

Release parameters for each of these three sources are presented in Table 3-1 and the emission rates used in the Level 1 Risk Assessment are presented in Table 3-2 and Table 3-3. Additional detail on estimating the worst-case emissions scenario for the fugitive building sources is provided in Section 3.6 below.

3.2 PMDI Rail Loadout

PMDI is delivered by rail throughout the year to the western side of the facility between manufacturing buildings 1 and 2, as identified in Figure 2-4. PMDI is unloaded from railcars directly to a designated bulk storage tank via an inlet valve. MFA assumes equipment components such as valves, flanges, pressure relief valves, and pumps, may occasionally have leaks resulting in fugitive air emissions during railcar unloading. TAC emissions from equipment component leaks were represented as a fugitive source in the Level 1 Risk Assessment with the unique label (**MDI_RAIL**).

Release parameters for fugitive emissions from PMDI rail loadout are presented in Table 3-1, and the emission rates are presented in Table 3-4.

3.3 Bulk Storage Tanks

There are nine bulk storage tanks used at the facility for liquid raw ingredient storage. The bulk storage tanks are non-heated, fixed roof vessels with varying liquid capacities ranging between 8,500 to 27,000 gallons. Each tank includes a small vent protruding from the top of the roof to allow for air inside the tank to escape during filling. As the tanks are not heated, breathing vapor losses are expected to occur on a daily basis, depending on the ambient temperature. The tank farm is used to store nine specific raw ingredients, with only one raw ingredient per tank. MFA reviewed safety data sheets for each of the raw ingredients stored in the tank farm and determined that, aside from PMDI, only one raw ingredient includes a TAC. As a result, only the PMDI bulk storage tank (**MDI_BULK**) and the storage tank containing the raw ingredient with a specified TAC (**RESIN_BULK**) were included in the Level 1 Risk Assessment.

As a result of the roof vents on the tanks, MFA characterized each bulk storage tank as a stack source. The location of the two bulk storage tanks are presented in Figure 2-4. The release parameters for the two bulk storage tanks are presented in Table 3-1 and the emission rates are presented in Table 3-4.

3.4 PMDI Pump

PMDI is pumped from the bulk storage tank into a 435 gallon tote. The tote is manually moved to building 2 where the PMDI is incorporated into the blending process for polyurethane fill products. The PMDI pump is located inside building 1. During this process, PMDI is not heated and remains at room temperature.

Fugitive vapor loss of methylene diphenyl diisocyanate from the tote filling are expected to be minimal due to the low vapor pressure of methylene diphenyl diisocyanate. However, they are not negligible and are therefore included with the Level 1 Risk Assessment. As a result of the location in building 1, MFA included TAC emissions from the PMDI pump with the (**BUILDING_1**) source in the Level 1 Risk Assessment. The modeled emission rates for the PMDI pump are presented in Table 3-2.

3.5 Emergency Diesel-Fired Generator

The facility utilizes a diesel-fired emergency generator to provide power to criterial equipment during power outages. The emergency generator has an existing permit limit of 50 hours of operation per year. Exhaust from the emergency generator is released to the atmosphere through a stack and were represented in the Level 1 Risk Assessment as a stack source with the label (**EGEN**).

Release parameters for the emergency diesel-fired generator are presented in Table 3-1, and the emission rates are presented in Table 3-4.

3.6 Toxicity Weighted Emission Rate Ranking

There are multiple formulations of ingredient variations possible for each product category. The finished products can also change year-to-year, or potentially undergo periodic formula changes. As a result, MFA worked with WVCO to develop a worst-case TAC emissions scenario with respect to the CAO permitting program while maintaining the operational flexibility needed to respond to market demands.

MFA assessed cancer and noncancer risk using a toxicity weighted emission rate ranking methodology for each finished product. A toxicity weighted emission rate was calculated for cancer risk, noncancer chronic risk and acute risk for each finished product within a given category. The finished product was ranked for each of the seven categories. MFA calculated the toxicity weighted emission rate using the following methodology:

- Using the calculation methodology identified in the LRAPA-approved TAC emissions inventory, MFA estimated TAC emissions for each individual finished product assuming a normalized manufacturing rate of 1 gallon.
- MFA divided the individual TAC emission rate estimated for each product by the applicable chronic cancer, chronic noncancer, and acute noncancer risk-based concentration (RBC) from OAR 340-245-8010 Table 2. This resulted in a toxicity weighted emission rate of the individual TAC for each exposure type in units of pound per microgram per cubic meter for each product. The toxicity weighted emission rate calculated for each TAC were summed together for each product, resulting in a total toxicity weighted emission rate for each product, and each exposure type.
- For each product category, the finished products with the highest ranked toxicity weighted emission rate for cancer risk, noncancer chronic risk, and acute risk were used as the basis for the worst-case scenario for the Level 1 Risk Assessment. As identified in the LRAPA-approved TAC emission inventory, some finished products, which were manufactured in 2018, have been discontinued. MFA calculated a toxicity weighted emission rate only for finished products that have the potential to be manufactured in the future.

To estimate the worst-case scenario, emissions for the highest ranked products for each product category were calculated based on either the facility maximum daily or annual production rates, depending on the type of risk being assessed (i.e., cancer, chronic noncancer, acute noncancer).

MFA used the estimated daily and annual emission rates assuming the worst-case products with the Level 1 Risk Assessment Tool, discussed in more detail in Section 4 below. MFA assumed all seven product categories could be manufactured simultaneously for each Level 1 Risk Assessment.

4 CONCEPTUAL SITE PLAN DEVELOPMENT

MFA estimated cancer and noncancer risk from the facility by conducting a Level 1 Risk Assessment following the methodology outlined in OAR 340-245-0050(8) using the toxicity weighted emission rate approach detailed in Section 3.6. The following subsections detail the inputs and assumptions used to complete the Level 1 Risk Assessment.

4.1 Exposure Locations

MFA conducted a Geographic Information System analysis of the land-use zoning designations around the facility to determine the nearest exposure location for each of the four exposure classification types in OAR 340-245-8010 Table 2. Zoning information was obtained from the Oregon Department of Land Conservation and Development. School locations were obtained from the Oregon Department of Human Services and the Oregon Health Authority. Hospital locations were obtained from the Oregon Office of Health Policy and Research. Tax lot data were obtained from Lane County. Data from these sources were reviewed to determine the exposure locations nearest to the facility. A map depicting the unaltered land-use zoning data collected from the area around the facility is presented in Figure 4-1.

MFA consolidated the land-use zoning regimes into four exposure location classifications specified in OAR 340-245-8010 Table 2. The exposure location classifications are residential, non-residential worker, non-residential child, and acute only. To assess the accuracy of the land-use zoning designations, MFA reviewed aerial imagery of the area around the facility to verify that the land-use zoning designations corresponded to the correct exposure type (e.g., there was no residential housing located in an area zoned as industrial.). A map presenting the exposure location classifications is presented in Figure 4-2.

MFA assessed Acute exposure using the distance from the TEU to either the nearest edge of the facility property boundary, or if a public right-of-way is located adjacent to the property boundary, the nearest edge on the far side of the public right-of-way, whichever is closer.

4.2 Dispersion Factors

MFA used the dispersion factors listed in OAR 340-245-8010 Table 3 for the Level 1 Risk Assessment. For each stack emission source, dispersion factors shown in Tables 3A and 3B were used to estimate chronic and acute risk, respectively. For each fugitive emission source, dispersion factors shown in Tables 3C and 3D were used to estimate chronic and acute risk, respectively. The stack height, building area, and building height for each TEU are necessary to determine the corresponding dispersion factor in Tables 3A through 3D. These parameters are presented in Table 3-1. Dispersion factors were interpolated in the event a stack height, building area or height, or exposure distance was between the corresponding values in Tables 3A through 3D. The LRAPA-approved dispersion factors used for this Level 1 Risk Assessment are presented in Table 4-1.

The distances from each TEU to the nearest exposure locations were measured in ArcGIS and are presented in Table 4-1. The distances from each TEU to the nearest residential exposure location are shown in Figure 4-3. The distances from each TEU to the nearest worker and acute exposure location are shown in Figure 4-4. Lastly, the distances from each TEU to the nearest non-residential child exposure locations are shown in Figure 4-5.

4.3 Risk Calculations

For each exposure location, TAC emission rates from each TEU were multiplied by the LRAPA-approved dispersion factor for each TEU shown in Table 4-1. This results in a TAC concentration in units of micrograms per cubic meter (ug/m^3). Calculated concentrations for each TAC emitted from each TEU are presented in Table 4-2 for cancer risk assessments, and Table 4-3 for noncancer risk assessments. The calculated concentration for each TAC was then divided by the appropriate RBC from OAR 340-245-8010 Table 2 to derive the corresponding risk estimate for each TAC.

These calculations are shown in Equations 1, 2, and 3 below:

Equation 1.

$$\text{Cancer Risk (increased chances in a million)} = \frac{\text{(TAC annual emission rate [g/s]) x (TEU dispersion factor [}\frac{ug/m^3}{g/s}\text{])}}{\text{(applicable RBC at exposure location [ug/m}^3\text{])}}$$

Equation 2.

$$\text{Chronic Noncancer Risk} = \frac{\text{(TAC annual emission rate [g/s]) x (TEU dispersion factor [}\frac{ug/m^3}{g/s}\text{])}}{\text{(applicable RBC at exposure location [ug/m}^3\text{])}}$$

Equation 3.

$$\text{Acute Noncancer Risk} = \frac{\text{(TAC daily emission rate [g/s]) x (TEU dispersion factor [}\frac{ug/m^3}{g/s}\text{])}}{\text{(applicable RBC at exposure location [ug/m}^3\text{])}}$$

Where:

g/s = grams per second.

The resulting risk from each TAC and TEU were summed to derive the total risk estimate for a specific exposure location.

4.4 Level 1 Risk Assessment Results

A summary of the Level 1 Risk Assessment cancer and noncancer results are presented in Tables 4-4 and 4-5, respectively. Table 4-6, shown below, compares the cancer and noncancer risk estimates from Tables 4-4 and 4-5 for each exposure assessment to the existing source Risk Action Levels established in OAR 340-245-8010 Table 1. The exposure assessment governing the Risk Action Level analysis is shown in bold.

Table 4-6. Risk Action Level Evaluations

Exposure Assessment	Risk Estimate	Existing Source Risk Action Level	Risk Action Level Analysis
Cancer Risk (increased chances in a million)			
Residential	2.3	5	Below Source Permit Level
Non-Residential Child	<0.1	2.5	Below Aggregate TEU Level
Non-Residential Worker	2.9	5	Below Source Permit Level
Chronic Noncancer Risk			
Residential	<0.1	0.1	Below Aggregate TEU Level
Non-Residential Child	<0.1	0.1	Below Aggregate TEU Level
Non-Residential Worker	0.3	0.5	Below Source Permit Level
Acute Noncancer Risk	0.8	1	Between Source Permit Level and Community Engagement Level
NOTE: TEU = toxic emission unit.			

As shown in Table 4-6, only the acute noncancer risk estimate exceeds the Source Permit Risk Action Level and is below the Community Engagement Risk Action Level.

5 CLOSING

If there are any questions or comments regarding this modeling report, please contact Andrew Rogers with MFA at (503) 407-6406.

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

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Table 3-1
Level 1 Risk Assessment Inputs for TEUs
The Willamette Valley Company, LLC - Eugene, Oregon

TEU ID	TEU Description	Stack or Fugitive?	Stack Height [1] (ft)	Fugitive	
				Area [2] (1,000 ft^2)	Height [1] (ft)
BUILDING1	Product Manufacturing Fugitive Emissions	Fugitive	--	21.0	20.4
BUILDING2-STK	Product Manufacturing Emissions (Dust Collector Stack)	Stack	11.3	--	--
BUILDING2-FUG	Product Manufacturing Fugitive Emissions	Fugitive	--	33.0	26.5
MDI_BULK	PMDI Bulk Storage Tank	Stack	32.0	--	--
RESIN_BULK	Resin Bulk Storage Tank	Stack	32.0	--	--
MDI_RAIL	PMDI Rail Unloading	Fugitive	--	0.35	7.55
EGEN	Emergency Diesel-Fired Generator	Stack	8.00	--	--

NOTES:

ft = feet

ft^2 = square feet

REFERENCES:

[1] Information provided by The Willamette Valley Company.

[2] Fugitive source area estimated using Google Earth.

Table 3-2
Risk Assessment Emission Rates (Fugitive Building 1)
The Willamette Valley Company, LLC - Eugene, Oregon

Toxic Air Contaminant	CAS	RBC? (Yes/No)	Coatings [1]			Putty [1]			PMDI Pump [2]			BUILDING_1		
			Res. Chronic Cancer	Res. Chronic Noncancer	Acute	Res. Chronic Cancer	Res. Chronic Noncancer	Acute	Res. Chronic Cancer	Res. Chronic Noncancer	Acute	Res. Chronic Cancer	Res. Chronic Noncancer	Acute
			(lb/yr)	(lb/yr)	(lb/day)	(lb/yr)	(lb/yr)	(lb/day)	(lb/yr)	(lb/yr)	(lb/day)	(lb/yr)	(lb/yr)	(lb/day)
ORGANIC COMPOUNDS														
Methylene diphenyl diisocyanate (MDI)	101-68-8	Yes	--	--	--	--	--	--	2.1E-04	2.1E-04	1.7E-05	2.1E-04	2.1E-04	1.7E-05
Formaldehyde	50-00-0	Yes	1,688	--	9.32	--	--	--	--	--	--	1,688	--	9.32
Methanol	67-56-1	Yes	13.8	--	0.096	--	--	--	--	--	--	13.8	--	0.096
Benzene	71-43-2	Yes	--	--	--	3.32	--	0.022	--	--	--	3.32	--	0.022
Acrylic acid	79-10-7	Yes	--	--	--	1.24	--	8.1E-03	--	--	--	1.24	--	8.1E-03
METALS														
Cobalt and compounds (neodecanoic acid, cobalt salt)	7440-48-4	Yes	--	32.8	--	--	--	--	--	--	--	--	32.8	--
INORGANIC COMPOUNDS														
Silica, crystalline (respirable)	7631-86-9	Yes	--	--	--	--	41.5	--	--	--	--	--	41.5	--
GLYCOL/ETHERS														
Propylene glycol monomethyl ether	107-98-2	Yes	--	--	--	438	--	3.41	--	--	--	438	--	3.41
Ethylene glycol monobutyl ether	111-76-2	Yes	0.15	38.6	1.4E-03	--	--	--	--	--	--	0.15	38.6	1.4E-03
Diethylene glycol monobutyl ether	112-34-5	Yes	--	--	--	--	0.013	--	--	--	--	--	0.013	--

NOTES:
RBC = risk-based concentration

REFERENCES:
[1] TAC emission rates are estimated using the LRAPA approved methodology. The product with the highest risk-weighted ranking for each finished product category is assumed to be produced at the PTE daily and annual rates.
[2] TAC emission rates are estimated using the LRAPA approved methodology. Assumes the PTE production for this source.

Table 3-3
Risk Assessment Emission Rates (Fugitive Building 2)
The Willamette Valley Company, LLC - Eugene, Oregon

Toxic Air Contaminant	CAS	RBC? (Yes/No)	Patch Iso [1]	BUILDING2-FUG [2]			BUILDING2-STK [2]		
			Res. Chronic Cancer	Res. Chronic Cancer	Res. Chronic Noncancer	Acute	Res. Chronic Cancer	Res. Chronic Noncancer	Acute
			(lb/yr)	(lb/yr)	(lb/yr)	(lb/day)	(lb/yr)	(lb/yr)	(lb/day)
ORGANIC COMPOUNDS									
Toluene-2,4-diisocyanate	584-84-9	No	4.6E-03	--	--	--	4.6E-03	--	--
Toluene-2,6-diisocyanate	91-08-7	No	1.1E-03	--	--	--	1.1E-03	--	--
Toluene diisocyanates (2,4- and 2,6-)	26471-62-5	Yes	3.8E-04	--	--	--	3.8E-04	--	--
Combined Toluene diisocyanates (2,4- and 2,6-) [3]	TDI	Yes	6.0E-03	--	--	--	6.0E-03	--	--
Hexamethylene-1,6-diisocyanate	822-06-0	Yes	--	--	--	--	--	0.36	3.1E-03
Acrylonitrile	107-13-1	Yes	--	--	--	--	0.84	--	5.4E-03
Ethyl benzene	100-41-4	Yes	--	--	--	--	8.17	--	0.061
Acetone	67-64-1	Yes	--	--	--	--	--	--	166
Vinylidene chloride	75-35-4	Yes	--	--	--	--	4.79	--	0.028
Xylene (mixture), including m-xylene, o-xylene, p-xylene	1330-20-7	Yes	--	--	--	--	18.5	--	0.14
Isopropylbenzene (Cumene)	98-82-8	Yes	--	--	--	--	0.27	--	2.1E-03
METALS									
Aluminum and compounds (Magnesium aluminium silicate)	7429-90-5	Yes	--	--	5.46	--	--	49.2	--
INORGANIC COMPOUNDS									
Silica, crystalline (respirable)	7631-86-9	Yes	--	0.044	8.35	1.8E-04	0.39	75.1	1.6E-03
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	--
Aluminum oxide (fibrous forms)	1344-28-1	No	--	0.035	15.6	1.4E-04	0.31	141	1.3E-03
GLYCOL/ETHERS									
Propylene glycol monomethyl ether	107-98-2	Yes	--	--	--	--	--	--	16.6

NOTES:

RBC = risk-based concentration

REFERENCES:

[1] TAC emission rates are estimated using the LRAPA approved methodology. The product with the highest risk-weighted ranking for each finished product category is assumed to be produced at the PTE daily and annual rates.

[2] Based on engineering judgement, the capture efficiency of solids loss during material filling operations is expected to be approximately 90 percent due to forced draft ventilation. The remaining 10 percent will be released into the building as a fugitive release. As a result of the forced draft ventilation, it's expected that vapor loss during filling and blending operations are 100% captured and will be emitted through the exhaust stack.

[3] For purposes of the level 1 risk assessment, annual emissions from Toluene-2,4-diisocyanate, Toluene-2,6-diisocyanate, and Toluene diisocyanates (2,4- and 2,6-) will be summed and compared against the applicable RBC.

Table 3-4
Risk Assessment Emission Rates (Other TEUs)
The Willamette Valley Company, LLC - Eugene, Oregon

Toxic Air Contaminant	CAS	RBC? (Yes/No)	MDI_RAIL [1]		MDI_BULK [1]		RESIN_BULK [1]		EGEN [1]	
			(lb/day)	(lb/yr)	(lb/day)	(lb/yr)	(lb/day)	(lb/yr)	(lb/day)	(lb/yr)
ORGANIC COMPOUNDS										
Methylene diphenyl diisocyanate (MDI)	101-68-8	Yes	1.2E-04	2.4E-03	1.8E-05	3.3E-04	--	--	--	--
Formaldehyde	50-00-0	Yes	--	--	--	--	--	--	0.083	1.04
Styrene	100-42-5	Yes	--	--	--	--	4.0E-04	4.6E-03	--	--
Benzene	71-43-2	Yes	--	--	--	--	--	--	8.9E-03	0.11
Ethyl benzene	100-41-4	Yes	--	--	--	--	--	--	5.2E-04	6.5E-03
Toluene	108-88-3	Yes	--	--	--	--	--	--	5.1E-03	0.063
Acrolein	107-02-8	Yes	--	--	--	--	--	--	1.6E-03	0.020
Acetaldehyde	75-07-0	Yes	--	--	--	--	--	--	0.038	0.47
1,3-Butadiene	106-99-0	Yes	--	--	--	--	--	--	0.010	0.13
Hexane	110-54-3	Yes	--	--	--	--	--	--	1.3E-03	0.016
Xylene (mixture), including m-xylene, o-xylene, p-xylene	1330-20-7	Yes	--	--	--	--	--	--	2.0E-03	0.025
DIESEL PM										
Diesel PM	DPM	Yes	--	--	--	--	--	--	0.27	3.41
METALS										
Arsenic	7440-38-2	Yes	--	--	--	--	--	--	7.7E-05	9.6E-04
Cadmium	7440-43-9	Yes	--	--	--	--	--	--	7.2E-05	9.0E-04
Chromium VI	18540-29-9	Yes	--	--	--	--	--	--	4.8E-06	6.0E-05
Copper	7440-50-8	Yes	--	--	--	--	--	--	2.0E-04	2.5E-03
Lead	7439-92-1	Yes	--	--	--	--	--	--	4.0E-04	5.0E-03
Manganese	7439-96-5	Yes	--	--	--	--	--	--	1.5E-04	1.9E-03
Mercury	7439-97-6	Yes	--	--	--	--	--	--	9.6E-05	1.2E-03
Nickel	7440-02-0	Yes	--	--	--	--	--	--	1.9E-04	2.3E-03
Selenium	7782-49-2	Yes	--	--	--	--	--	--	1.1E-04	1.3E-03
INORGANIC COMPOUNDS										
Ammonia	7664-41-7	Yes	--	--	--	--	--	--	0.14	1.74
Hydrochloric acid	7647-01-0	Yes	--	--	--	--	--	--	8.9E-03	0.11
POLYCYCLIC AROMATIC COMPOUNDS										
PAHs (excluding Naphthalene)	PAHs	Yes	--	--	--	--	--	--	1.7E-03	0.022
Benzo(a)pyrene	50-32-8	Yes	--	--	--	--	--	--	1.7E-09	2.1E-08
Naphthalene	91-20-3	Yes	--	--	--	--	--	--	9.5E-04	0.012

NOTES:

RBC = risk-based concentration

REFERENCES:

[1] TAC emission rates are estimated using the LRAPA approved methodology. Assumes the PTE production for this source.

Table 4-1
TEU Dispersion Factors
The Willamette Valley Company, LLC - Eugene, Oregon

TEU ID	TEU Description	Exposure Location Distance [1] (m)				LARAPA-Approved Dispersion Factor			
		Chronic			Acute	Annual Exposure [2] (ug/m³/lb/yr)			Daily [3] (ug/m³/lb/day)
		Residential	Non-Residential Child [4]	Non-Residential Worker		Residential	Non-Residential Child	Non-Residential Worker	Acute
BUILDING1	Product Manufacturing Fugitive Emissions	290	1,000	21.0	21.0	2.16E-04 [5]	2.70E-05	3.40E-03 [6]	2.90 [6]
BUILDING2-STK	Product Manufacturing Emissions (Dust Collector Stack)	300	1,000	36.1	36.1	1.70E-04 [7]	2.20E-05 [7]	3.30E-03 [6]	8.30 [6]
BUILDING2-FUG	Product Manufacturing Fugitive Emissions	230	980	25.8	25.8	2.94E-04 [5]	2.81E-05	2.20E-03 [6]	1.80 [6]
MDI_BULK	PMDI Bulk Storage Tank	310	1,000	41.9	41.9	1.62E-04 [8]	2.10E-05 [7]	1.49E-03 [9]	4.02 [9]
RESIN_BULK	Resin Bulk Storage Tank	305	1,000	39.2	39.2	1.66E-04 [8]	2.10E-05 [7]	1.49E-03 [9]	4.02 [9]
MDI_RAIL	PMDI Rail Unloading	320	1,000	29.0	29.0	1.90E-04 [5]	2.70E-05	4.50E-03 [6]	4.80 [6]
EGEN	Emergency Diesel-Fired Generator	300	1,000	39.0	39.0	1.70E-04 [10]	2.20E-05 [10]	3.30E-03 [11]	8.30 [11]

NOTES:

m = meter

ug = microgram

m^3 = cubic meter

lb = pound

yr = year

REFERENCES:

[1] Exposure location distances were measured in ArcGIS from the source location to the closest exposure location type.

[2] OAR 340-245-8050 Table 3A, "Stack Emission Dispersion Factors for Annual Exposure (ug/m^3/lbs/year)" and Table 3C, "Fugitive Emission Dispersion Factors for Annual Exposure (ug/m^3/lb/year)."

[3] OAR 340-245-8050 Table 3B, "Stack Emission Dispersion Factors for 24 hour Exposure (ug/m^3/lbs/day)" and Table 3D "Fugitive Emission Dispersion Factors for 24 hour Exposure (ug/m^3/lb/day)."

[4] The Non-Residential Child exposure distance is greater than the 1,000-meter maximum distance listed in OAR 340-245-8050, Table 5, therefore, 1,000 meters is conservatively assumed.

[5] Value was interpolated between the two closest dispersion factors based on exposure distance.

[6] Distance is less than 50 meters, therefore the dispersion factor with the lowest distance (50 meters) was assumed.

[7] Value was interpolated between the two closest dispersion factors based on release height.

[8] Value was twice interpolated using the two closest dispersion factors for distance and for the release height.

[9] Value was interpolated between the two closest dispersion factors based on release height. Distance is less than 50 meters, therefore the dispersion factor with the lowest distance (50 meters) was assumed.

[10] Height is less than 5 meters, therefore the dispersion factor with the shortest height (5 meters) was assumed.

[11] Height is less than 5 meters, therefore the dispersion factor with the shortest height (5 meters) was assumed. Distance is less than 50 meters, therefore the dispersion factor with the lowest distance (50 meters) was assumed.

Table 4-2
Significant TEU TAC Concentrations for Cancer Risk Assessments
The Willamette Valley Company, LLC - Eugene, Oregon

Toxic Air Contaminant	CAS	Annual Emission Rate [1] (lb/yr)	Annual Average Concentration [a]					
			Residential		Non-Residential Child		Non-Residential Worker	
BUILDING1								
Dispersion Factor	--	--	**2.16E-04**	**(µg/m³/lb/yr)**	**2.70E-05**	**(µg/m³/lb/yr)**	**3.40E-03**	**(µg/m³/lb/yr)**
Methylene diphenyl diisocyanate (MDI)	101-68-8	2.05E-04	4.43E-08	(µg/m³)	5.54E-09	(µg/m³)	6.97E-07	(µg/m³)
Formaldehyde	50-00-0	1.688	0.36	(µg/m³)	0.05	(µg/m³)	5.74	(µg/m³)
Methanol	67-56-1	13.8	2.98E-03	(µg/m³)	3.73E-04	(µg/m³)	0.05	(µg/m³)
Benzene	71-43-2	3.32	7.16E-04	(µg/m³)	8.95E-05	(µg/m³)	0.01	(µg/m³)
Acrylic acid	79-10-7	1.24	2.68E-04	(µg/m³)	3.35E-05	(µg/m³)	4.22E-03	(µg/m³)
Propylene glycol monomethyl ether	107-98-2	438	0.09	(µg/m³)	0.01	(µg/m³)	1.49	(µg/m³)
Ethylene glycol monobutyl ether	111-76-2	0.15	3.14E-05	(µg/m³)	3.92E-06	(µg/m³)	4.94E-04	(µg/m³)
BUILDING2-STK								
Dispersion Factor	--	--	**1.70E-04**	**(µg/m³/lb/yr)**	**2.20E-05**	**(µg/m³/lb/yr)**	**3.30E-03**	**(µg/m³/lb/yr)**
Toluene diisocyanates (2,4- and 2,6-)	TDI	6.05E-03	1.03E-06	(µg/m³)	1.33E-07	(µg/m³)	2.00E-05	(µg/m³)
Acrylonitrile	107-13-1	0.84	1.43E-04	(µg/m³)	1.86E-05	(µg/m³)	2.78E-03	(µg/m³)
Ethyl benzene	100-41-4	8.17	1.39E-03	(µg/m³)	1.80E-04	(µg/m³)	0.03	(µg/m³)
Vinylidene chloride	75-35-4	4.79	8.14E-04	(µg/m³)	1.05E-04	(µg/m³)	0.02	(µg/m³)
Xylene (mixture), including m-xylene, o-xylene, p-xylene	1330-20-7	18.5	3.15E-03	(µg/m³)	4.08E-04	(µg/m³)	0.06	(µg/m³)
Isopropylbenzene (Cumene)	98-82-8	0.27	4.57E-05	(µg/m³)	5.91E-06	(µg/m³)	8.87E-04	(µg/m³)
Silica, crystalline (respirable)	7631-86-9	0.39	6.68E-05	(µg/m³)	8.65E-06	(µg/m³)	1.30E-03	(µg/m³)
Aluminum oxide (fibrous forms)	1344-28-1	0.31	5.29E-05	(µg/m³)	6.84E-06	(µg/m³)	1.03E-03	(µg/m³)
BUILDING2-FUG								
Dispersion Factor	--	--	**2.94E-04**	**(µg/m³/lb/yr)**	**2.81E-05**	**(µg/m³/lb/yr)**	**2.20E-03**	**(µg/m³/lb/yr)**
Isopropylbenzene (Cumene)	7631-86-9	0.04	1.28E-05	(µg/m³)	1.23E-06	(µg/m³)	9.61E-05	(µg/m³)
Silica, crystalline (respirable)	1344-28-1	0.03	1.02E-05	(µg/m³)	9.71E-07	(µg/m³)	7.60E-05	(µg/m³)
MDI_BULK								
Dispersion Factor	--	--	**1.62E-04**	**(µg/m³/lb/yr)**	**2.10E-05**	**(µg/m³/lb/yr)**	**1.49E-03**	**(µg/m³/lb/yr)**
Methylene diphenyl diisocyanate (MDI)	101-68-8	3.31E-04	5.37E-08	(µg/m³)	6.98E-09	(µg/m³)	4.95E-07	(µg/m³)
RESIN_BULK								
Dispersion Factor	--	--	**1.66E-04**	**(µg/m³/lb/yr)**	**2.10E-05**	**(µg/m³/lb/yr)**	**1.49E-03**	**(µg/m³/lb/yr)**
Styrene	100-42-5	4.64E-03	7.70E-07	(µg/m³)	9.76E-08	(µg/m³)	6.92E-06	(µg/m³)
MDI_RAIL								
Dispersion Factor	--	--	**1.90E-04**	**(µg/m³/lb/yr)**	**2.70E-05**	**(µg/m³/lb/yr)**	**4.50E-03**	**(µg/m³/lb/yr)**
Methylene diphenyl diisocyanate (MDI)	101-68-8	2.40E-03	4.57E-07	(µg/m³)	6.49E-08	(µg/m³)	1.08E-05	(µg/m³)
EGEN								
Dispersion Factor	--	--	**1.70E-04**	**(µg/m³/lb/yr)**	**2.20E-05**	**(µg/m³/lb/yr)**	**3.30E-03**	**(µg/m³/lb/yr)**
Formaldehyde	50-00-0	1.04	1.76E-04	(µg/m³)	2.28E-05	(µg/m³)	3.42E-03	(µg/m³)
Benzene	71-43-2	0.11	1.90E-05	(µg/m³)	2.46E-06	(µg/m³)	3.69E-04	(µg/m³)
Ethyl benzene	100-41-4	6.54E-03	1.11E-06	(µg/m³)	1.44E-07	(µg/m³)	2.16E-05	(µg/m³)
Toluene	108-88-3	0.06	1.08E-05	(µg/m³)	1.39E-06	(µg/m³)	2.09E-04	(µg/m³)
Acrolein	107-02-8	0.02	3.46E-06	(µg/m³)	4.47E-07	(µg/m³)	6.71E-05	(µg/m³)
Acetaldehyde	75-07-0	0.47	7.99E-05	(µg/m³)	1.03E-05	(µg/m³)	1.55E-03	(µg/m³)
1,3-Butadiene	106-99-0	0.13	2.22E-05	(µg/m³)	2.87E-06	(µg/m³)	4.30E-04	(µg/m³)
Hexane	110-54-3	0.02	2.74E-06	(µg/m³)	3.55E-07	(µg/m³)	5.33E-05	(µg/m³)
Xylene (mixture), including m-xylene, o-xylene, p-xylene	1330-20-7	0.03	4.32E-06	(µg/m³)	5.60E-07	(µg/m³)	8.40E-05	(µg/m³)
Diesel PM	DPM	3.41	5.79E-04	(µg/m³)	7.49E-05	(µg/m³)	0.01	(µg/m³)
Arsenic	7440-38-2	9.60E-04	1.63E-07	(µg/m³)	2.11E-08	(µg/m³)	3.17E-06	(µg/m³)
Cadmium	7440-43-9	9.00E-04	1.53E-07	(µg/m³)	1.98E-08	(µg/m³)	2.97E-06	(µg/m³)
Chromium VI	18540-29-9	6.00E-05	1.02E-08	(µg/m³)	1.32E-09	(µg/m³)	1.98E-07	(µg/m³)
Copper	7440-50-8	2.46E-03	4.18E-07	(µg/m³)	5.41E-08	(µg/m³)	8.12E-06	(µg/m³)
Lead	7439-92-1	4.98E-03	8.47E-07	(µg/m³)	1.10E-07	(µg/m³)	1.64E-05	(µg/m³)
Manganese	7439-96-5	1.86E-03	3.16E-07	(µg/m³)	4.09E-08	(µg/m³)	6.14E-06	(µg/m³)
Mercury	7439-97-6	1.20E-03	2.04E-07	(µg/m³)	2.64E-08	(µg/m³)	3.96E-06	(µg/m³)
Nickel	7440-02-0	2.34E-03	3.98E-07	(µg/m³)	5.15E-08	(µg/m³)	7.72E-06	(µg/m³)
Selenium	7782-49-2	1.32E-03	2.24E-07	(µg/m³)	2.90E-08	(µg/m³)	4.36E-06	(µg/m³)
Ammonia	7664-41-7	1.74	2.96E-04	(µg/m³)	3.83E-05	(µg/m³)	5.74E-03	(µg/m³)
Hydrochloric acid	7647-01-0	0.11	1.90E-05	(µg/m³)	2.46E-06	(µg/m³)	3.69E-04	(µg/m³)
PAHs (excluding Naphthalene)	PAHs	0.02	3.69E-06	(µg/m³)	4.78E-07	(µg/m³)	7.17E-05	(µg/m³)
Benzo(a)pyrene	50-32-8	2.13E-08	3.62E-12	(µg/m³)	4.68E-13	(µg/m³)	7.02E-11	(µg/m³)
Naphthalene	91-20-3	0.01	2.01E-06	(µg/m³)	2.60E-07	(µg/m³)	3.90E-05	(µg/m³)

NOTES:

lb = pound

yr = year

µg = microgram

m^3 = cubic meter

[a] Concentration ($\mu g/m^3$) = (emission rate [lb/unit]) x (dispersion factor [$\mu g/m^3$/lb/unit])

REFERENCE:

[1] See Table 3-2, Risk Assessment Emission Rates (Fugitive Building 1) or Table 3-3, Risk Assessment Emission Rates (Fugitive Building 2) or Table 3-4, Risk Assessment Emission Rates (Other TEUs).

Table 4-3
Significant TEU TAC Concentrations for Noncancer Risk Assessments
The Willamette Valley Company, LLC - Eugene, Oregon

Toxic Air Contaminant	CAS	Emission Rates [1]		Annual Average Concentration [a]						Acute Concentration	
		Annual (lb/yr)	Daily (lb/day)	Residential		Non-Residential Child		Non-Residential Worker			
BUILDING1											
Dispersion Factor	--	--	--	**2.16E-04**	**(µg/m³/lb/yr)**	**2.70E-05**	**(µg/m³/lb/yr)**	**3.40E-03**	**(µg/m³/lb/yr)**	**2.90**	**(µg/m³/lb/day)**
Methylene diphenyl diisocyanate (MDI)	101-68-8	2.05E-04	1.71E-05	4.43E-08	(µg/m³)	5.54E-09	(µg/m³)	6.97E-07	(µg/m³)	4.97E-05	(µg/m³)
Formaldehyde	50-00-0	--	9.32	--	(µg/m³)	--	(µg/m³)	--	(µg/m³)	27.0	(µg/m³)
Methanol	67-56-1	--	0.10	--	(µg/m³)	--	(µg/m³)	--	(µg/m³)	0.28	(µg/m³)
Benzene	71-43-2	--	0.02	--	(µg/m³)	--	(µg/m³)	--	(µg/m³)	0.06	(µg/m³)
Acrylic acid	79-10-7	--	8.14E-03	--	(µg/m³)	--	(µg/m³)	--	(µg/m³)	0.02	(µg/m³)
Propylene glycol monomethyl ether	107-98-2	--	3.41	--	(µg/m³)	--	(µg/m³)	--	(µg/m³)	9.88	(µg/m³)
Ethylene glycol monobutyl ether	111-76-2	38.6	1.36E-03	8.34E-03	(µg/m³)	1.04E-03	(µg/m³)	0.13	(µg/m³)	3.96E-03	(µg/m³)
Cobalt and compounds (neodecanoic acid, cobalt salt)	7440-48-4	32.8	--	7.10E-03	(µg/m³)	8.87E-04	(µg/m³)	0.11	(µg/m³)	--	(µg/m³)
Silica, crystalline (respirable)	7631-86-9	41.5	--	8.97E-03	(µg/m³)	1.12E-03	(µg/m³)	0.14	(µg/m³)	--	(µg/m³)
BUILDING2-STK											
Dispersion Factor	--	--	--	**1.70E-04**	**(µg/m³/lb/yr)**	**2.20E-05**	**(µg/m³/lb/yr)**	**3.30E-03**	**(µg/m³/lb/yr)**	**8.30**	**(µg/m³/lb/day)**
Hexamethylene-1,6-diisocyanate	822-06-0	0.36	3.09E-03	6.16E-05	(µg/m³)	7.97E-06	(µg/m³)	1.20E-03	(µg/m³)	0.03	(µg/m³)
Acrylonitrile	107-13-1	--	5.38E-03	--	(µg/m³)	--	(µg/m³)	--	(µg/m³)	0.04	(µg/m³)
Ethyl benzene	100-41-4	--	0.06	--	(µg/m³)	--	(µg/m³)	--	(µg/m³)	0.50	(µg/m³)
Acetone	67-64-1	--	166	--	(µg/m³)	--	(µg/m³)	--	(µg/m³)	1,378	(µg/m³)
Vinylidene chloride	75-35-4	--	0.03	--	(µg/m³)	--	(µg/m³)	--	(µg/m³)	0.23	(µg/m³)
Xylene (mixture), including m-xylene, o-xylene, p-xylene	1330-20-7	--	0.14	--	(µg/m³)	--	(µg/m³)	--	(µg/m³)	1.14	(µg/m³)
Isopropylbenzene (Cumene)	98-82-8	--	2.09E-03	--	(µg/m³)	--	(µg/m³)	--	(µg/m³)	0.02	(µg/m³)
Aluminum and compounds (Magnesium aluminium silicate)	7429-90-5	49.2	--	8.36E-03	(µg/m³)	1.08E-03	(µg/m³)	0.16	(µg/m³)	--	(µg/m³)
Silica, crystalline (respirable)	7631-86-9	75.1	1.62E-03	0.01	(µg/m³)	1.65E-03	(µg/m³)	0.25	(µg/m³)	0.01	(µg/m³)
Propylene glycol monomethyl ether	107-98-2	--	16.6	--	(µg/m³)	--	(µg/m³)	--	(µg/m³)	138	(µg/m³)
BUILDING2-FUG											
Dispersion Factor	--	--	--	**2.94E-04**	**(µg/m³/lb/yr)**	**2.81E-05**	**(µg/m³/lb/yr)**	**2.20E-03**	**(µg/m³/lb/yr)**	**1.80**	**(µg/m³/lb/day)**
Aluminum and compounds (Magnesium aluminium silicate)	7429-90-5	5.46	--	1.61E-03	(µg/m³)	1.54E-04	(µg/m³)	0.01	(µg/m³)	--	(µg/m³)
Silica, crystalline (respirable)	7631-86-9	8.35	1.80E-04	2.45E-03	(µg/m³)	2.35E-04	(µg/m³)	0.02	(µg/m³)	3.23E-04	(µg/m³)
MDI_BULK											
Dispersion Factor	--	--	--	**1.62E-04**	**(µg/m³/lb/yr)**	**2.10E-05**	**(µg/m³/lb/yr)**	**1.49E-03**	**(µg/m³/lb/yr)**	**4.02**	**(µg/m³/lb/day)**
Methylene diphenyl diisocyanate (MDI)	101-68-8	3.31E-04	1.76E-05	5.37E-08	(µg/m³)	6.98E-09	(µg/m³)	4.95E-07	(µg/m³)	7.07E-05	(µg/m³)
RESIN_BULK											
Dispersion Factor	--	--	--	**1.66E-04**	**(µg/m³/lb/yr)**	**2.10E-05**	**(µg/m³/lb/yr)**	**1.49E-03**	**(µg/m³/lb/yr)**	**4.02**	**(µg/m³/lb/day)**
Styrene	100-42-5	4.64E-03	3.97E-04	7.70E-07	(µg/m³)	9.76E-08	(µg/m³)	6.92E-06	(µg/m³)	1.60E-03	(µg/m³)
MDI_RAIL											
Dispersion Factor	--	--	--	**1.90E-04**	**(µg/m³/lb/yr)**	**2.70E-05**	**(µg/m³/lb/yr)**	**4.50E-03**	**(µg/m³/lb/yr)**	**4.80**	**(µg/m³/lb/day)**
Methylene diphenyl diisocyanate (MDI)	101-68-8	2.40E-03	1.17E-04	4.57E-07	(µg/m³)	6.49E-08	(µg/m³)	1.08E-05	(µg/m³)	5.63E-04	(µg/m³)
EGEN											
Dispersion Factor	--	--	--	**1.70E-04**	**(µg/m³/lb/yr)**	**2.20E-05**	**(µg/m³/lb/yr)**	**3.30E-03**	**(µg/m³/lb/yr)**	**8.30**	**(µg/m³/lb/day)**
Formaldehyde	50-00-0	1.04	0.08	1.76E-04	(µg/m³)	2.28E-05	(µg/m³)	3.42E-03	(µg/m³)	0.69	(µg/m³)
Benzene	71-43-2	0.11	8.94E-03	1.90E-05	(µg/m³)	2.46E-06	(µg/m³)	3.69E-04	(µg/m³)	0.07	(µg/m³)
Ethyl benzene	100-41-4	6.54E-03	5.23E-04	1.11E-06	(µg/m³)	1.44E-07	(µg/m³)	2.16E-05	(µg/m³)	4.34E-03	(µg/m³)
Toluene	108-88-3	0.06	5.06E-03	1.08E-05	(µg/m³)	1.39E-06	(µg/m³)	2.09E-04	(µg/m³)	0.04	(µg/m³)
Acrolein	107-02-8	0.02	1.63E-03	3.46E-06	(µg/m³)	4.47E-07	(µg/m³)	6.71E-05	(µg/m³)	0.01	(µg/m³)
Acetaldehyde	75-07-0	0.47	0.04	7.99E-05	(µg/m³)	1.03E-05	(µg/m³)	1.55E-03	(µg/m³)	0.31	(µg/m³)
1,3-Butadiene	106-99-0	0.13	0.01	2.22E-05	(µg/m³)	2.87E-06	(µg/m³)	4.30E-04	(µg/m³)	0.09	(µg/m³)
Hexane	110-54-3	0.02	1.29E-03	2.74E-06	(µg/m³)	3.55E-07	(µg/m³)	5.33E-05	(µg/m³)	0.01	(µg/m³)
Xylene (mixture), including m-xylene, o-xylene, p-xylene	1330-20-7	0.03	2.04E-03	4.32E-06	(µg/m³)	5.60E-07	(µg/m³)	8.40E-05	(µg/m³)	0.02	(µg/m³)
Diesel PM	DPM	3.41	0.27	5.79E-04	(µg/m³)	7.49E-05	(µg/m³)	0.01	(µg/m³)	2.26	(µg/m³)
Arsenic	7440-38-2	9.60E-04	7.68E-05	1.63E-07	(µg/m³)	2.11E-08	(µg/m³)	3.17E-06	(µg/m³)	6.37E-04	(µg/m³)
Cadmium	7440-43-9	9.00E-04	7.20E-05	1.53E-07	(µg/m³)	1.98E-08	(µg/m³)	2.97E-06	(µg/m³)	5.98E-04	(µg/m³)
Chromium VI	18540-29-9	6.00E-05	4.80E-06	1.02E-08	(µg/m³)	1.32E-09	(µg/m³)	1.98E-07	(µg/m³)	3.98E-05	(µg/m³)
Copper	7440-50-8	2.46E-03	1.97E-04	4.18E-07	(µg/m³)	5.41E-08	(µg/m³)	8.12E-06	(µg/m³)	1.63E-03	(µg/m³)
Lead	7439-92-1	4.98E-03	3.98E-04	8.47E-07	(µg/m³)	1.10E-07	(µg/m³)	1.64E-05	(µg/m³)	3.31E-03	(µg/m³)
Manganese	7439-96-5	1.86E-03	1.49E-04	3.16E-07	(µg/m³)	4.09E-08	(µg/m³)	6.14E-06	(µg/m³)	1.24E-03	(µg/m³)
Mercury	7439-97-6	1.20E-03	9.60E-05	2.04E-07	(µg/m³)	2.64E-08	(µg/m³)	3.96E-06	(µg/m³)	7.97E-04	(µg/m³)
Nickel	7440-02-0	2.34E-03	1.87E-04	3.98E-07	(µg/m³)	5.15E-08	(µg/m³)	7.72E-06	(µg/m³)	1.55E-03	(µg/m³)
Selenium	7782-49-2	1.32E-03	1.06E-04	2.24E-07	(µg/m³)	2.90E-08	(µg/m³)	4.36E-06	(µg/m³)	8.76E-04	(µg/m³)
Ammonia	7664-41-7	1.74	0.14	2.96E-04	(µg/m³)	3.83E-05	(µg/m³)	5.74E-03	(µg/m³)	1.16	(µg/m³)
Hydrochloric acid	7647-01-0	0.11	8.94E-03	1.90E-05	(µg/m³)	2.46E-06	(µg/m³)	3.69E-04	(µg/m³)	0.07	(µg/m³)
PAHs (excluding Naphthalene)	PAHs	0.02	1.74E-03	3.69E-06	(µg/m³)	4.78E-07	(µg/m³)	7.17E-05	(µg/m³)	0.01	(µg/m³)
Benzo(a)pyrene	50-32-8	2.13E-08	1.70E-09	3.62E-12	(µg/m³)	4.68E-13	(µg/m³)	7.02E-11	(µg/m³)	1.41E-08	(µg/m³)
Naphthalene	91-20-3	0.01	9.46E-04	2.01E-06	(µg/m³)	2.60E-07	(µg/m³)	3.90E-05	(µg/m³)	7.85E-03	(µg/m³)

NOTES:

lb = pound

yr = year

µg = microgram

m^3 = cubic meter

[a] Concentration (µg/m³) = (emission rate (lb/unit)) x (dispersion factor (µg/m³/lb/unit))

REFERENCES:

[1] See Table 3-2, Risk Assessment Emission Rates (Fugitive Building 1) or Table 3-3, Risk Assessment Emission Rates (Fugitive Building 2) or Table 3-4, Risk Assessment Emission Rates (Other TEUs).

Table 4-4
Level 1 Cancer Risk Assessment Summary
The Willamette Valley Company, LLC - Eugene, Oregon

Toxic Air Contaminant	CAS	Residential Exposure			Non-Residential Child Exposure			Non-Residential Worker Exposure		
		Annual Average Concentration ($\mu g/m^3$)	RBC Cancer ($\mu g/m^3$)	Excess Cancer Risk	Annual Average Concentration ($\mu g/m^3$)	RBC Cancer ($\mu g/m^3$)	Excess Cancer Risk	Annual Average Concentration ($\mu g/m^3$)	RBC Cancer ($\mu g/m^3$)	Excess Cancer Risk
BUILDING_1										
Methylene diphenyl diisocyanate (MDI)	101-68-8	4.43E-08	--	--	5.54E-09	--	--	6.97E-07	--	--
Formaldehyde	50-00-0	0.36	0.17	2.14	0.05	4.30	0.01	5.74	2.00	2.87
Methanol	67-56-1	2.98E-03	--	--	3.73E-04	--	--	0.05	--	--
Benzene	71-43-2	7.16E-04	0.13	5.51E-03	8.95E-05	3.30	2.71E-05	0.01	1.50	7.52E-03
Acrylic acid	79-10-7	2.68E-04	--	--	3.35E-05	--	--	4.22E-03	--	--
Propylene glycol monomethyl ether	107-98-2	0.09	--	--	0.01	--	--	1.49	--	--
Ethylene glycol monobutyl ether	111-76-2	3.14E-05	--	--	3.92E-06	--	--	4.94E-04	--	--
BUILDING_1 Total		--	--	2.15	--	--	0.01	--	--	2.88
BUILDING_2-STK										
Toluene diisocyanates (2,4- and 2,6-)	TDI	1.03E-06	0.09	1.13E-05	1.33E-07	2.40	5.54E-08	2.00E-05	1.10	1.81E-05
Acrylonitrile	107-13-1	1.43E-04	0.02	9.56E-03	1.86E-05	0.38	4.88E-05	2.78E-03	0.18	0.02
Ethyl benzene	100-41-4	1.39E-03	0.40	3.47E-03	1.80E-04	10.0	1.80E-05	0.03	4.80	5.62E-03
Vinylidene chloride	75-35-4	8.14E-04	--	--	1.05E-04	--	--	0.02	--	--
Xylene (mixture), including m-xylene, o-xylene, p-xylene	1330-20-7	3.15E-03	--	--	4.08E-04	--	--	0.06	--	--
Isopropylbenzene (Cumene)	98-82-8	4.57E-05	--	--	5.91E-06	--	--	8.87E-04	--	--
Silica, crystalline (respirable)	7631-86-9	6.68E-05	--	--	8.65E-06	--	--	1.30E-03	--	--
Aluminum oxide (fibrous forms)	1344-28-1	5.29E-05	--	--	6.84E-06	--	--	1.03E-03	--	--
BUILDING_2-STK Total		--	--	0.01	--	--	6.69E-05	--	--	0.02
BUILDING_2-FUG										
Isopropylbenzene (Cumene)	7631-86-9	1.28E-05	--	--	1.23E-06	--	--	9.61E-05	--	--
Silica, crystalline (respirable)	1344-28-1	1.02E-05	--	--	9.71E-07	--	--	7.60E-05	--	--
BUILDING_2-FUG Total		--	--	--	--	--	--	--	--	--
MDI_BULK										
Methylene diphenyl diisocyanate (MDI)	101-68-8	5.37E-08	--	--	6.98E-09	--	--	4.95E-07	--	--
RESIN_BULK										
Styrene	100-42-5	7.70E-07	--	--	9.76E-08	--	--	6.92E-06	--	--
MDI_RAIL										
Methylene diphenyl diisocyanate (MDI)	101-68-8	4.57E-07	--	--	6.49E-08	--	--	1.08E-05	--	--
EGEN										
Formaldehyde	50-00-0	1.76E-04	0.17	1.04E-03	2.28E-05	4.30	5.30E-06	3.42E-03	2.00	1.71E-03
Benzene	71-43-2	1.90E-05	0.13	1.46E-04	2.46E-06	3.30	7.45E-07	3.69E-04	1.50	2.46E-04
Ethyl benzene	100-41-4	1.11E-06	0.40	2.78E-06	1.44E-07	10.0	1.44E-08	2.16E-05	4.80	4.50E-06
Toluene	108-88-3	1.08E-05	--	--	1.39E-06	--	--	2.09E-04	--	--
Acrolein	107-02-8	3.46E-06	--	--	4.47E-07	--	--	6.71E-05	--	--
Acetaldehyde	75-07-0	7.99E-05	0.45	1.78E-04	1.03E-05	12.0	8.62E-07	1.55E-03	5.50	2.82E-04
1,3-Butadiene	106-99-0	2.22E-05	0.03	6.72E-04	2.87E-06	0.86	3.34E-06	4.30E-04	0.40	1.08E-03
Hexane	110-54-3	2.74E-06	--	--	3.55E-07	--	--	5.33E-05	--	--
Xylene (mixture), including m-xylene, o-xylene, p-xylene	1330-20-7	4.32E-06	--	--	5.60E-07	--	--	8.40E-05	--	--
Diesel PM	DPM	5.79E-04	0.10	5.79E-03	7.49E-05	2.60	2.88E-05	0.01	1.20	9.37E-03
Arsenic	7440-38-2	1.63E-07	2.40E-05	6.80E-03	2.11E-08	1.30E-03	1.62E-05	3.17E-06	6.20E-04	5.11E-03
Cadmium	7440-43-9	1.53E-07	5.60E-04	2.73E-04	1.98E-08	0.01	1.41E-06	2.97E-06	6.70E-03	4.43E-04
Chromium VI	18540-29-9	1.02E-08	3.10E-05	3.29E-04	1.32E-09	5.20E-04	2.54E-06	1.98E-07	1.00E-03	1.98E-04
Copper	7440-50-8	4.18E-07	--	--	5.41E-08	--	--	8.12E-06	--	--
Lead	7439-92-1	8.47E-07	--	--	1.10E-07	--	--	1.64E-05	--	--
Manganese	7439-96-5	3.16E-07	--	--	4.09E-08	--	--	6.14E-06	--	--
Mercury	7439-97-6	2.04E-07	--	--	2.64E-08	--	--	3.96E-06	--	--
Nickel	7440-02-0	3.98E-07	3.80E-03	1.05E-04	5.15E-08	0.10	5.15E-07	7.72E-06	0.05	1.68E-04
Selenium	7782-49-2	2.24E-07	--	--	2.90E-08	--	--	4.36E-06	--	--
Ammonia	7664-41-7	2.96E-04	--	--	3.83E-05	--	--	5.74E-03	--	--
Hydrochloric acid	7647-01-0	1.90E-05	--	--	2.46E-06	--	--	3.69E-04	--	--
PAHs (excluding Naphthalene)	PAHs	3.69E-06	4.30E-05	0.09	4.78E-07	1.60E-03	2.99E-04	7.17E-05	3.00E-03	0.02
Benzo(a)pyrene	50-32-8	3.62E-12	4.30E-05	8.41E-08	4.68E-13	1.60E-03	2.93E-10	7.02E-11	3.00E-03	2.34E-08
Naphthalene	91-20-3	2.01E-06	0.03	6.93E-05	2.60E-07	0.76	3.42E-07	3.90E-05	0.35	1.11E-04
EGEN Total		--	--	0.10	--	--	3.59E-04	--	--	0.04
Facility Total		--	--	2.26	--	--	0.01	--	--	2.94
Risk Comparison Value [1]		--	--	2.3	--	--	<0.1	--	--	2.9

NOTES:

μg = microgram

m^3 = cubic meter

RBC = risk-based concentration

REFERENCE:

[1] Risk comparison value is the facility total risk rounded in accordance with OAR 340-245-0020(4)(a)(A).

Table 4-5
Level 1 Noncancer Risk Assessment Summary
The Willamette Valley Company, LLC - Eugene, Oregon

Toxic Air Contaminant	CAS	CAS (No-Dash)	Residential Exposure			Non-Residential Child Exposure			Non-Residential Worker Exposure			Acute Exposure		
			Annual Average Concentration ($\mu g/m^3$)	RBC Noncancer ($\mu g/m^3$)	Residential Noncancer Risk	Annual Average Concentration ($\mu g/m^3$)	RBC Noncancer ($\mu g/m^3$)	Non-Residential Child Noncancer Risk	Annual Average Concentration ($\mu g/m^3$)	RBC Noncancer ($\mu g/m^3$)	Non-Residential Worker Noncancer Risk	Maximum Daily Concentration ($\mu g/m^3$)	Noncancer ($\mu g/m^3$)	Acute Noncancer Risk
BUILDING1														
Methylene diphenyl diisocyanate (MDI)	101-68-8	101-68-8	4.43E-08	0.080	5.54E-07	5.54E-09	0.35	1.59E-08	6.97E-07	0.35	1.99E-06	4.97E-05	12.0	4.14E-06
Formaldehyde	50-00-0	50-00-0	--	9.00	--	--	40.0	--	--	40.0	--	27.0	49.0	0.55
Methanol	67-56-1	67-56-1	--	4,000	--	--	18,000	--	--	18,000	--	2.79E-01	28,000	9.95E-06
Benzene	71-43-2	71-43-2	--	3.00	--	--	13.0	--	--	13.0	--	6.28E-02	29.0	2.17E-03
Acrylic acid	79-10-7	79-10-7	--	1.00	--	--	4.40	--	--	4.40	--	2.34E-02	6.000	3.94E-06
Propylene glycol monomethyl ether	107-98-2	107-98-2	--	7,000	--	--	31,000	--	--	31,000	--	9.88E+00	--	--
Ethylene glycol monobutyl ether	111-76-2	111-76-2	8.34E-03	82.0	1.02E-04	1.04E-03	360	2.89E-06	1.31E-01	360	3.64E-04	3.95E-03	29,000	1.36E-07
Cobalt and compounds (neodecanoic acid, cobalt salt)	7440-48-4	7440-48-4	7.10E-03	0.10	0.071	8.87E-04	0.44	2.02E-03	1.12E-01	0.44	0.25	--	--	--
Silica, crystalline (respirable)	7631-86-9	7631-86-9	8.97E-03	3.00	2.99E-03	1.12E-03	13.0	8.62E-05	1.41E-01	13.0	0.011	--	--	--
Total Building 1			--	--	0.076	--	--	2.19E-03	--	--	2.45E-01	--	--	0.55
BUILDING2-STK														
Hexamethylene-1,6-diisocyanate	822-06-0	822-06-0	6.16E-05	0.069	8.92E-04	7.97E-06	0.30	2.66E-05	1.20E-03	0.30	3.98E-03	2.56E-02	0.21	0.12
Acrylonitrile	107-13-1	107-13-1	--	5.00	--	--	22.0	--	--	22.0	--	4.47E-02	220	2.03E-04
Ethyl benzene	100-41-4	100-41-4	--	260	--	--	1,100	--	--	1,100	--	5.03E-01	22,000	2.29E-05
Acetone	67-64-1	67-64-1	--	31,000	--	--	140,000	--	--	140,000	--	1.38E+03	62,000	0.022
Vinylidene chloride	75-35-4	75-35-4	--	200	--	--	880	--	--	880	--	2.35E-01	200	1.17E-03
Xylene (mixture), including m-xylene, o-xylene, p-xylene	1330-20-7	1330-20-7	--	220	--	--	970	--	--	970	--	1.14E+00	8,700	1.31E-04
Isopropylbenzene (Cumene)	98-82-8	98-82-8	--	400	--	--	1,800	--	--	1,800	--	1.73E-02	--	--
Aluminum and compounds (Magnesium aluminium silicate)	7429-90-5	7429-90-5	8.36E-03	5.00	1.67E-03	1.08E-03	22.0	4.92E-05	1.62E-01	22.0	7.38E-03	--	--	--
Silica, crystalline (respirable)	7631-86-9	7631-86-9	1.28E-02	3.00	4.26E-03	1.65E-03	13.0	1.27E-04	2.48E-01	13.0	0.019	1.34E-02	--	--
Propylene glycol monomethyl ether	107-98-2	107-98-2	--	7,000	--	--	31,000	--	--	31,000	--	1.38E+02	--	--
Total Building2-STK			--	--	0.01	--	--	2.03E-04	--	--	0.030	--	--	0.15
BUILDING2-FUG														
Aluminum and compounds (Magnesium aluminium silicate)	7429-90-5	7429-90-5	1.61E-03	5.00	3.21E-04	1.54E-04	22.0	6.98E-06	1.20E-02	22.0	5.46E-04	--	--	--
Silica, crystalline (respirable)	7631-86-9	7631-86-9	2.45E-03	3.00	8.18E-04	2.35E-04	13.0	1.80E-05	1.84E-02	13.0	1.41E-03	3.23E-04	--	--
Total Building2-FUG			--	--	**1.14E-03**	--	--	**2.50E-05**	--	--	**1.96E-03**	--	--	0
MDI_BULK														
Methylene diphenyl diisocyanate (MDI)	101-68-8	101-68-8	5.37E-08	0.080	**6.71E-07**	6.98E-09	0.35	1.99E-08	4.95E-07	0.35	**1.41E-06**	7.07E-05	12.0	**5.89E-06**
RESIN_BULK														
Styrene	100-42-5	100-42-5	7.70E-07	1,000	7.70E-10	9.76E-08	4,400	2.22E-11	6.92E-06	4,400	**1.57E-09**	1.60E-03	21,000	**7.60E-08**
MDI_RAIL														
Methylene diphenyl diisocyanate (MDI)	101-68-8	101-68-8	4.57E-07	0.080	5.71E-06	6.49E-08	0.35	1.85E-07	1.08E-05	0.35	3.09E-05	5.63E-04	12.0	**4.69E-05**
EGEN														
Formaldehyde	50-00-0	50-00-0	1.76E-04	9.00	1.96E-05	2.28E-05	40.0	5.70E-07	3.42E-03	40.0	8.54E-05	6.88E-01	49.0	0.014
Benzene	71-43-2	71-43-2	1.90E-05	3.00	6.33E-06	2.46E-06	13.0	1.89E-07	3.69E-04	13.0	2.84E-05	7.42E-02	29.0	2.56E-03
Ethyl benzene	100-41-4	100-41-4	1.11E-06	260	4.28E-09	1.44E-07	1,100	1.31E-10	2.16E-05	1,100	1.96E-08	4.34E-03	22,000	1.97E-07
Toluene	108-88-3	108-88-3	1.08E-05	5,000	2.15E-09	1.39E-06	22,000	6.32E-11	2.09E-04	22,000	9.49E-09	4.20E-02	7,500	5.60E-06
Acrolein	107-02-8	107-02-8	3.46E-06	0.35	9.88E-06	4.47E-07	1.50	2.98E-07	6.71E-05	1.50	4.47E-05	1.35E-02	6.90	1.96E-03
Acetaldehyde	75-07-0	75-07-0	7.99E-05	140	5.71E-07	1.03E-05	620	1.67E-08	1.55E-03	620	2.50E-06	3.12E-01	470	6.64E-04
1,3-Butadiene	106-99-0	106-99-0	2.22E-05	2.00	1.11E-05	2.87E-06	8.80	3.26E-07	4.30E-04	8.80	4.89E-05	8.66E-02	660	1.31E-04
Hexane	110-54-3	110-54-3	2.74E-06	700	3.92E-09	3.55E-07	3,100	1.15E-10	5.33E-05	3,100	1.72E-08	1.07E-02	--	--
Xylene (mixture), including m-xylene, o-xylene, p-xylene	1330-20-7	1330-20-7	4.32E-06	220	1.97E-08	5.60E-07	970	5.77E-10	8.40E-05	970	8.65E-08	1.69E-02	8,700	1.94E-06
Diesel PM	DPM	DPM	5.79E-04	5.00	1.16E-04	7.49E-05	22.0	3.41E-06	1.12E-02	22.0	5.11E-04	2.26E+00	--	--
Arsenic	7440-38-2	7440-38-2	1.63E-07	1.70E-04	9.60E-04	2.11E-08	2.40E-03	8.80E-06	3.17E-06	2.40E-03	1.32E-03	6.37E-04	0.20	3.19E-03
Cadmium	7440-43-9	7440-43-9	1.53E-07	5.00E-03	3.06E-05	1.98E-08	0.037	5.35E-07	2.97E-06	0.037	8.03E-05	5.98E-04	0.030	0.020
Chromium VI	18540-29-9	18540-29-9	1.02E-08	0.083	1.23E-07	1.32E-09	0.88	1.50E-09	1.98E-07	0.88	2.25E-07	3.98E-05	0.30	1.33E-04
Copper	7440-50-8	7440-50-8	4.18E-07	--	--	5.41E-08	--	--	8.12E-06	--	--	1.63E-03	100	1.63E-05
Lead	7439-92-1	7439-92-1	8.47E-07	0.15	5.64E-06	1.10E-07	0.66	1.66E-07	1.64E-05	0.66	2.49E-05	3.31E-03	0.15	0.022
Manganese	7439-96-5	7439-96-5	3.16E-07	0.090	3.51E-06	4.09E-08	0.40	1.02E-07	4.14E-06	0.40	1.53E-05	1.24E-03	0.30	4.12E-03
Mercury	7439-97-6	7439-97-6	2.04E-07	0.077	2.65E-06	2.64E-08	0.63	4.19E-08	3.96E-06	0.63	6.29E-06	7.97E-04	0.60	1.33E-03
Nickel	7440-02-0	7440-02-0	3.98E-07	0.014	2.84E-05	5.15E-08	0.062	8.30E-07	7.72E-06	0.062	1.25E-04	1.55E-03	0.20	7.77E-03
Selenium	7782-49-2	7782-49-2	2.24E-07	--	--	2.90E-08	--	--	4.36E-06	--	--	8.76E-04	2.00	4.38E-04
Ammonia	7664-41-7	7664-41-7	2.96E-04	500	5.92E-07	3.83E-05	2,200	1.74E-08	5.74E-03	2,200	2.61E-06	1.16E+00	1,200	9.63E-04
Hydrochloric acid	7647-01-0	7647-01-0	1.90E-05	20.0	9.50E-07	2.46E-06	88.0	2.79E-08	3.69E-04	88.0	4.19E-06	7.42E-02	2,100	3.53E-05
PAHs (excluding Naphthalene)	PAHs	PAHs	3.69E-06	--	--	4.78E-07	--	--	7.17E-05	--	--	1.44E-02	--	--
Benzo(a)pyrene	50-32-8	50-32-8	3.62E-12	2.00E-03	1.81E-09	4.68E-13	8.80E-03	5.32E-11	7.02E-11	8.80E-03	7.98E-09	1.41E-08	2.00E-03	7.04E-06
Naphthalene	91-20-3	91-20-3	2.01E-06	3.70	5.43E-07	2.60E-07	16.0	1.63E-08	3.90E-05	16.0	2.44E-06	7.85E-03	200	3.92E-05
Total EGEN			--	--	1.20E-03	--	--	1.53E-05	--	--	**2.30E-03**	--	--	0.079
Facility Total			--	--	**0.08**	--	--	**2.35E-03**	--	--	**0.30**	--	--	**0.78**
Risk Comparison Value [1]			--	--	0.1	--	--	48.1	--	--	**0.3**	--	--	**0.8**

NOTES:
µg = microgram
m^3 = cubic meter
RBC = risk-based concentration

REFERENCE:
[1] Risk comparison value is the facility total risk rounded in accordance with OAR 340-245-0020(41)(a)(A).

FIGURES

Figure 2-1
Aerial Photograph of Facility

The Willamette Valley Company, LLC
586 and 660 McKinley Street
Eugene, Oregon

Legend

Property Boundary

Key Map

0 25 50
Meters

Source:
Aerial photograph obtained from the Oregon Statewide Imagery Program.

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Path: X:\0306.64 - ATTORNEY CLIENT PRIVILEGED\GIS\Fig2-1_Aerial_Photograph.mxd Print Date: 1/19/2022 Reviewed By: A. Rogers Produced By: cgusa Project: 0306.64

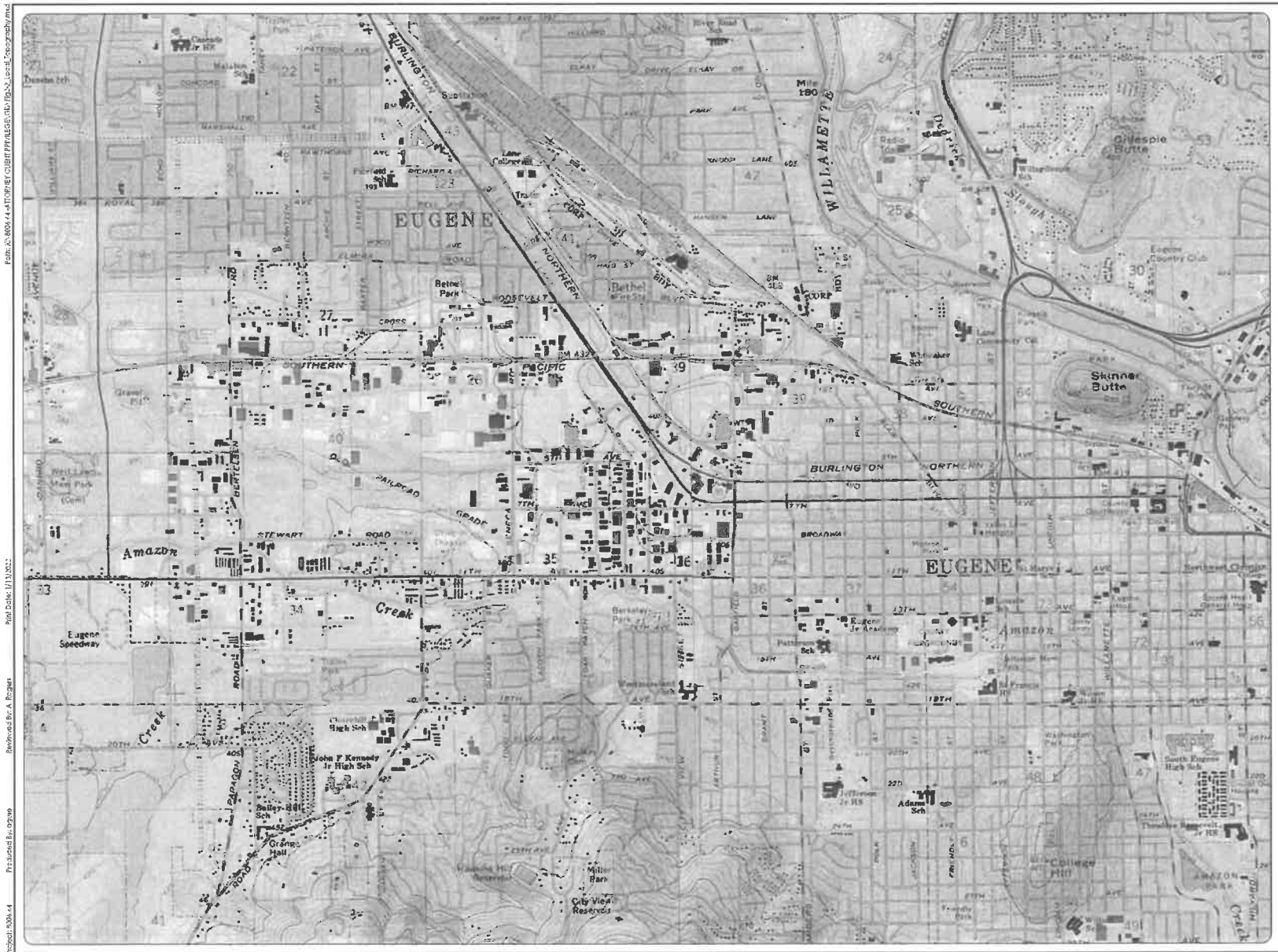

Figure 2-2
Local Topography of Facility

The Willamette Valley Company, LLC
586 and 660 McKinley Street
Eugene, Oregon

Legend

Property Boundary

Key Map

0 500 1,000
Meters

Source:
Topographic map obtained from ESRI ArcGIS Online.

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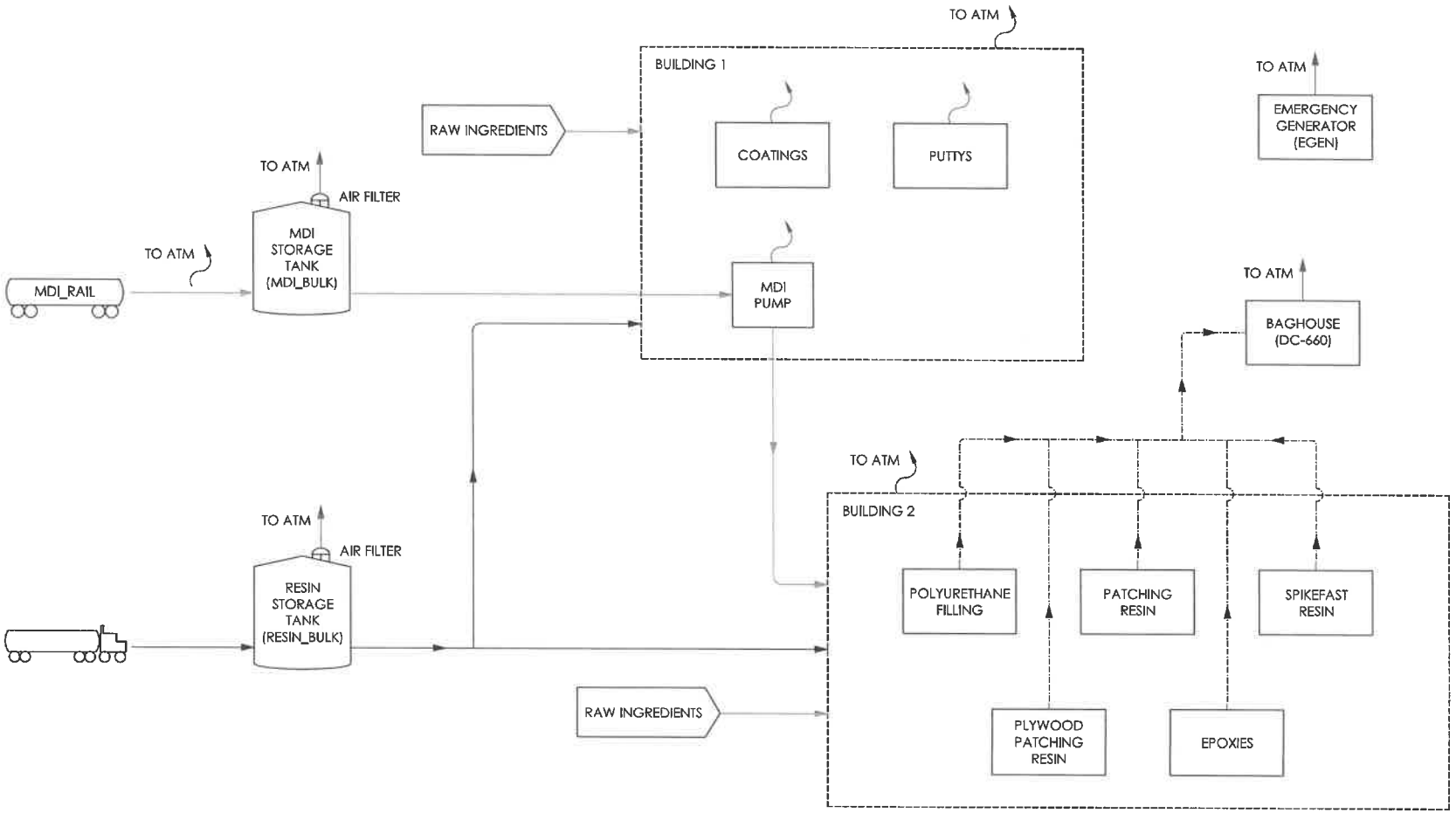

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LEGEND

- MDI
- RESIN
- RAW INGREDIENTS
- EMISSIONS
- EMISSIONS TO ATMOSPHERE (VENT OR STACK)
- EMISSIONS TO ATMOSPHERE (FUGITIVE SOURCE)
- EMISSIONS TO BUILDING (FUGITIVE SOURCE)

Figure 2-3
Process Flow Diagram
The Willamette Valley Company, LLC
Eugene, OR

Date: 3/9/2022 1:13:00 PM Printed by: Amy DeVito-McBride Filepath: L:\Projects\8006.64 Sloal Rives- WVCO CAO\Draft Documents_PFD\WVCO_PFD-8006.64-V0.0.dwg

Figure 2-4
Facility Plot Plan

The Willamette Valley Company, LLC
586 and 660 McKinley Street
Eugene, Oregon

Legend

- Fugitive Source
- Point Source
- Fugitive Building Source
- Property Boundary

Key Map

0 20 40
Meters

Source:
Aerial photograph obtained from the Oregon Statewide Imagery Program.

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Path: V:\8056.64-ATTORNEY CLIENT PRIVILEGED\GIS\Fig2-4_Facility_Plot_Plan.mxd
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Project: 8056.64

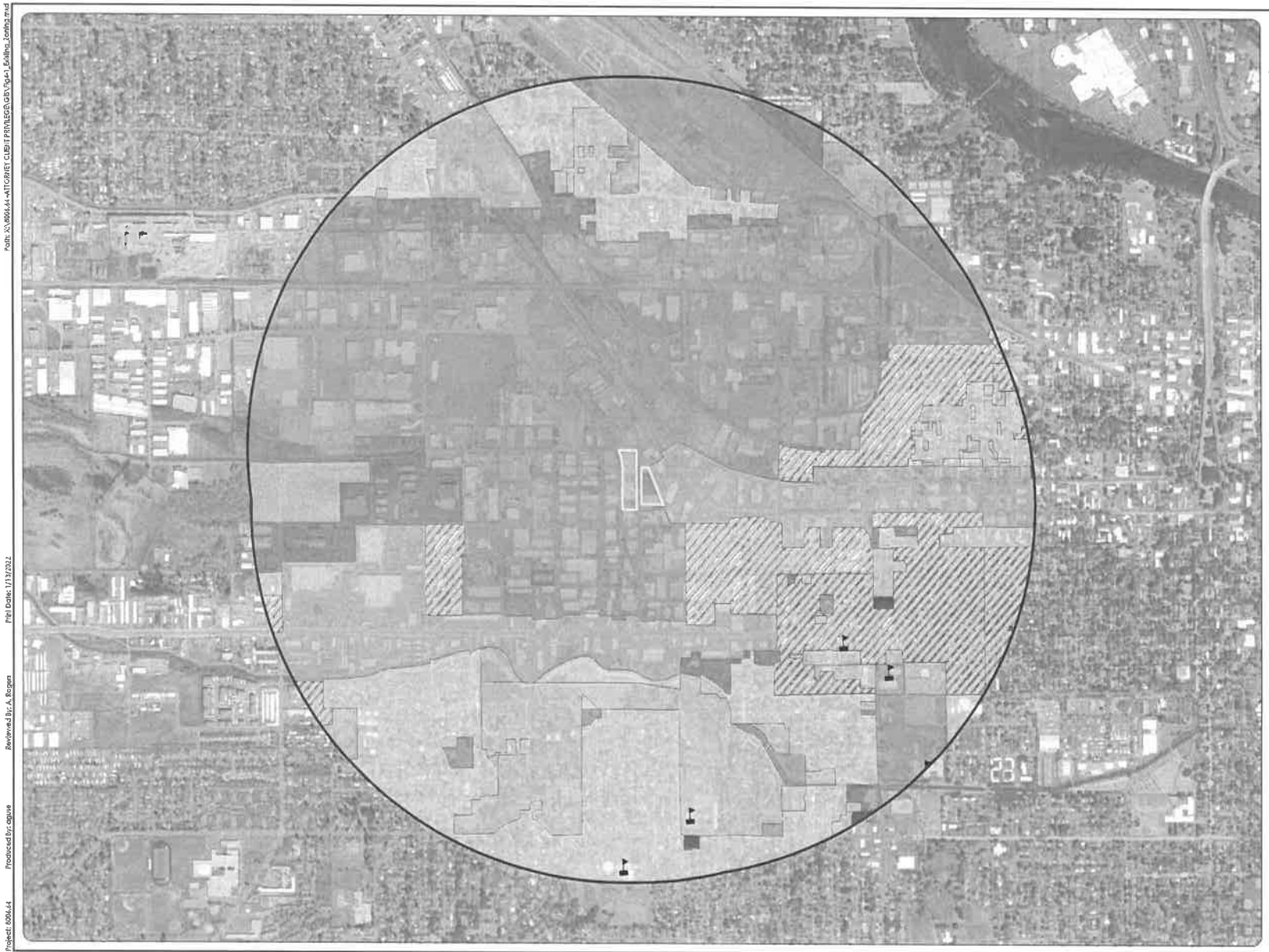

Figure 4-1
Existing Zoning

The Willamette Valley Company, LLC
586 and 660 McKinley Street
Eugene, Oregon

Legend

- Property Boundary
- School Location (2015-16)
- 1.5km radius from facility buffer

Oregon Statewide Zoning (2017)

- Commercial - Neighborhood
- Commercial - General
- Commercial - Office
- High-density Res.
- Industrial - Heavy
- Industrial - Light
- Medium High-density Res.
- Medium Low-density Res.
- Mixed-Use Com. & Res. Medium
- Parks & Open Space
- Public & semi-public Uses

Key Map

0 310 620
Meters

Source:
Aerial photograph obtained from the Oregon Statewide Imagery Program.
Zoning data obtained from the Oregon Department of Land Conservation and Development.

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Project: 8006.44 Produced by: agaue Reviewed by: A. Rogers Print Date: 1/13/2022 Path: X:\8006.44-ATTORNEY CLIENT PRIVILEGE\GIS\Fig4-1_Existing_Zoning.mxd

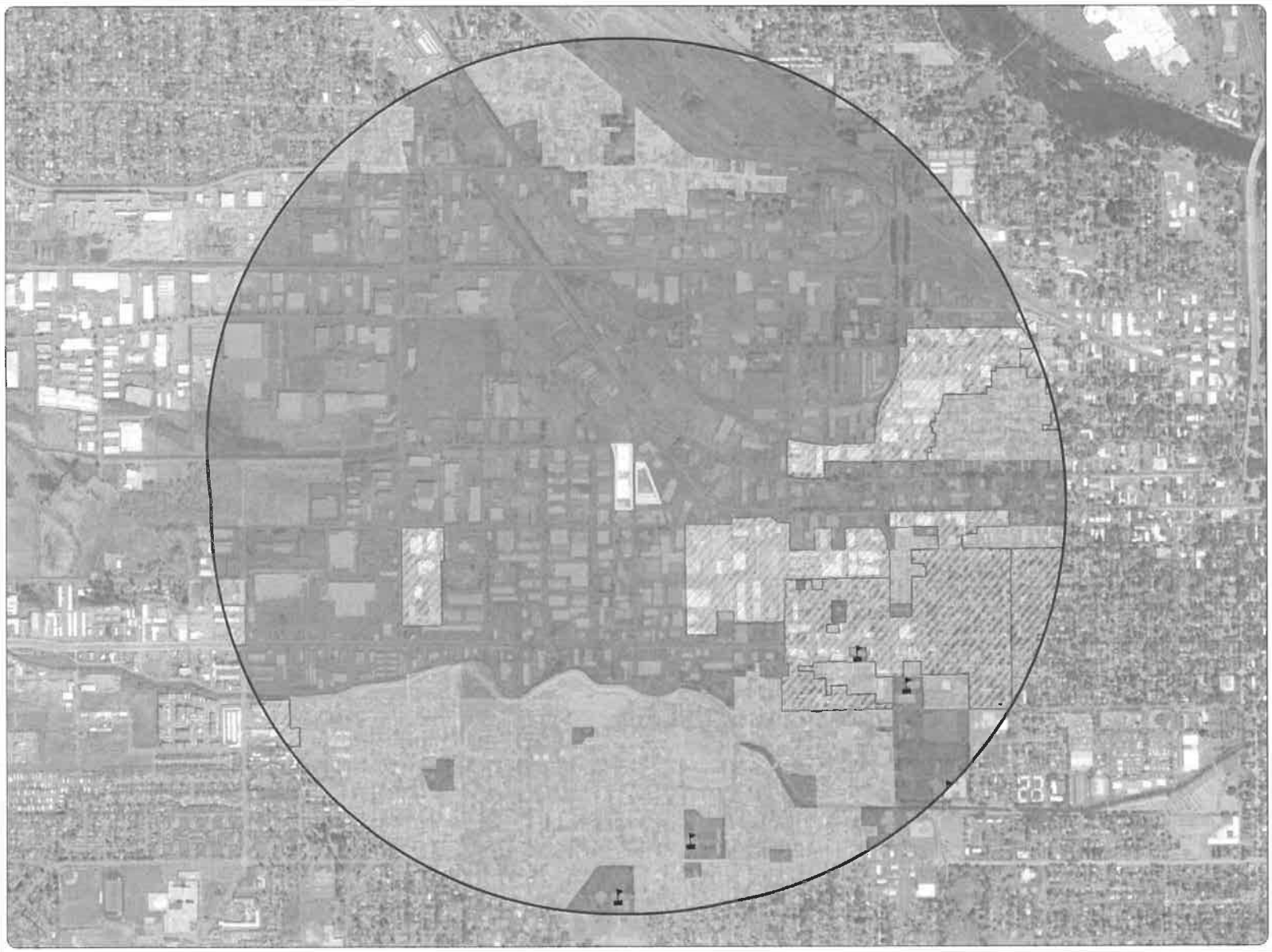

Figure 4-2
Exposure Classifications

The Willamette Valley Company, LLC
586 and 660 McKinley Street
Eugene, Oregon

Legend

- School Location (2015-16)
- Property Boundary
- 1.5km Property Buffer

Risk-Based Land Use Classification

- Worker
- Acute Only
- Child
- Residential
- Residential, Mixed-Use

Key Map

0 150 300
Meters

Source:
Aerial photograph obtained from the Oregon Statewide Imagery Program.

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Path: J:\1964.64-ATTORNEY CLIENT PRIVILEGED\GIS\Fig4-2_Land_Use_Classifications.mxd
Print Date: 1/13/2022
Reviewed By: A. Pogert
Produced By: agrue
Project: 1964.64

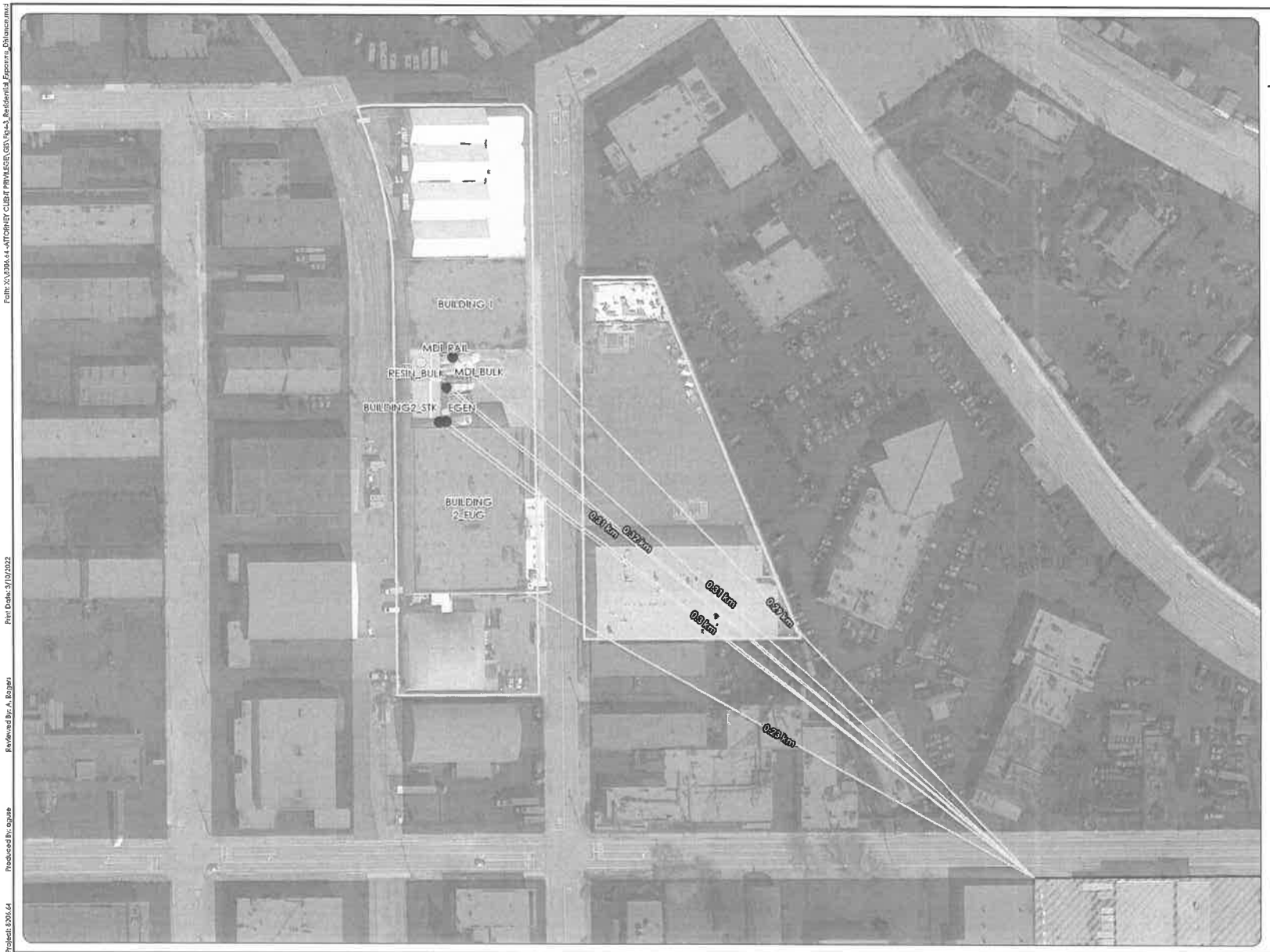

Figure 4-3
Residential Exposure Location Distances

The Willamette Valley Company, LLC
586 and 660 McKinley Street
Eugene, Oregon

Legend

- Fugitive Source
- Point Source
- Fugitive Building Source

Distance to Nearest Receptor

- Residential
- Property Boundary

Risk-Based Land Use Classification

- Worker
- Residential, Mixed-Use

Key Map

0 10 20
Meters

Source:
Aerial photograph obtained from the Oregon Statewide Imagery Program.

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Path: X:\5206.44-ATTORNEY CLIENT PRIVILEGE\GIS\Fig4-3_Residential Exposure Distances.mxd
Print Date: 3/10/2022
Reviewed By: A. Rogers
Produced By: aquale
Project: 5206.64

Figure 4-4
Worker and Acute Exposure Location Distances

The Willamette Valley Company, LLC
586 and 660 McKinley Street
Eugene, Oregon

Legend

- Fugitive Source
- Point Source
- Fugitive Building Source

Distance to Nearest Receptor

- Worker and Acute
- Property Boundary

Risk-Based Land Use Classification

- Worker

Key Map

0 10 20
Meters

Source:
Aerial photograph obtained from the Oregon Statewide Imagery Program.

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Project: 3904-44 Produced By: cjquinn Reviewed By: A. Rogers Print Date: 3/10/2022 Path: K:\3904\44-ATTAINET CLIENT FINAL\ECEL\GIS\Fig4-4_Worker_Exposure_Distance.mxd

Figure 4-5
Non-Residential Child Exposure Location Distance

The Willamette Valley Company, LLC
586 and 660 McKinley Street
Eugene, Oregon

Legend

- School Location (2015-16)
- Fugitive Source
- Point Source
- Fugitive Building Source

Distance to Nearest Receptor

- Child
- Property Boundary

Risk-Based Land Use Classification

- Worker
- Child
- Residential
- Residential, Mixed-Use

Key Map

0 50 100
Meters

Source:
Aerial photograph obtained from the Oregon Statewide Imagery Program.

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Path: X:\3006.64-ATT\GIS\07-CLIENT FINAL\ESER_GIS\Fig4-5_Non-Res_Child_Exposure_Distance.mxd
Print Date: 3/10/2022
Reviewed By: A. Rogers
Produced By: cgruhe
Project: 3006.64

Robbye Robinson

From: Katie Eagleson
Sent: Monday, May 16, 2022 13:22
To: Robbye Robinson
Cc: Max Hueftle
Subject: Fw: WVCO Level 1 Risk Assessment Report
Attachments: LVL1 Risk Assessment Report-WVCO.pdf

Hi Robbye,

Attached is the CAO Risk Assessment for The Willamette Valley Company to be logged into their CAO folder.

Thanks a million,
Katie

From: Andrew Rogers <arogers@maulfoster.com>
Sent: Friday, May 13, 2022 4:47 PM
To: Katie Eagleson <katie@LRAPA.ORG>
Cc: 10 Sarah France <Sarah.France@wilvaco.com>; 10 Meagan Tkach <Meagan.Tkach@wilvaco.com>; Chad Darby <cdarby@maulfoster.com>
Subject: RE: WVCO Level 1 Risk Assessment Report

Hi Katie,

Happy Friday (the 13th). On behalf of the Willamette Valley Company, please see the level 1 risk assessment report, attached to this email. If you have any questions about anything in this report, please let me know.

Have a good weekend.

Andrew Rogers | MAUL FOSTER & ALONGI, INC.
Project Meteorologist
pronouns: he/him/his
m. **503 407 6406**

MAUL FOSTER ALONGI

6 Centerpointe Drive, Suite 360 Lake Oswego, OR 97035
www.maulfoster.com