A-2: Lake Forest Warehouse Mobile Source Health Risk Assessment

This page intentionally left blank

Lake Forest Warehouse

MOBILE SOURCE HEALTH RISK ASSESSMENT

CITY OF LAKE FOREST

PREPARED BY:

Haseeb Qureshi
hqureshi@urbanxroads.com
(949) 660-1994

APRIL 18, 2023 (REVISED)
JANUARY 26, 2022

TABLE OF CONTENTS

TABLE OF CONTENTS ..... **I**
APPENDICES ..... **I**
LIST OF EXHIBITS ..... **II**
LIST OF TABLES ..... **II**
LIST OF ABBREVIATED TERMS ..... **III**
EXECUTIVE SUMMARY **1**
1 INTRODUCTION **4**
1.1 Site Location 5
1.2 Project Description 5
2 BACKGROUND **9**
2.1 Background on Recommended Methodology 9
2.2 Emissions Estimation 9
2.3 Exposure Quantification 14
2.4 Carcinogenic Chemical Risk 17
2.5 Non-carcinogenic Exposures 19
2.6 Potential Project-Related TAC Source Cancer and Non-Cancer Risks 19
3 REFERENCES **23**
4 CERTIFICATIONS **25**

APPENDICES

APPENDIX 2.1: EMFAC EMISSIONS SUMMARY
APPENDIX 2.2: AERMOD MODEL INPUT/OUTPUT
APPENDIX 2.3: RISK CALCULATIONS

LIST OF EXHIBITS

EXHIBIT 1-A: LOCATION MAP 6
EXHIBIT 1-B: SITE PLAN 7
EXHIBIT 2-A: MODELED EMISSION SOURCES 12
EXHIBIT 2-B: WIND ROSE (SRA 19) 15
EXHIBIT 2-C: MODELED RECEPTORS 20

LIST OF TABLES

TABLE ES-1: SUMMARY OF CANCER AND NON-CANCER RISKS 3
TABLE 2-1: 2023 WEIGHTED AVERAGE DPM EMISSIONS FACTORS 11
TABLE 2-2: DPM EMISSIONS FROM PROJECT TRUCKS (2023 ANALYSIS YEAR) 13
TABLE 2-3: AERMOD MODEL PARAMETERS 16
TABLE 2-4: EXPOSURE ASSUMPTIONS FOR INDIVIDUAL CANCER RISK (30 YEAR RESIDENTIAL) 17
TABLE 2-5: EXPOSURE ASSUMPTIONS FOR INDIVIDUAL CANCER RISK (25 YEAR WORKER) 17
TABLE 2-6: EXPOSURE ASSUMPTIONS FOR INDIVIDUAL CANCER RISK (9 YEAR SCHOOL CHILD) 17

LIST OF ABBREVIATED TERMS

(1)	Reference
µg	Microgram
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
APS	Auxiliary Power System
AQMD	Air Quality Management District
ARB	Air Resources Board
CEQA	California Environmental Quality Act
CPF	Cancer Potency Factor
DPM	Diesel Particulate Matter
EMFAC	Emission Factor Model
EPA	Environmental Protection Agency
HHD	Heavy Heavy-Duty
HI	Hazard Index
HRA	Health Risk Assessment
LHD	Light Heavy-Duty
MATES	Multiple Air Toxics Exposure Study
MEIR	Maximally Exposed Individual Receptor
MEIW	Maximally Exposed Individual Worker
MHD	Medium Heavy-Duty
NAD	North American Datum
OEHHA	Office of Environmental Health Hazard Assessment
PM10	Particulate Matter 10 microns in diameter or less
Project	Lake Forest Warehouse
REL	Reference Exposure Level
RM	Recommended Measures
SCAQMD	South Coast Air Quality Management District
SRA	Source Receptor Area
TAC	Toxic Air Contaminant
TGA	Trip Generation Assessment
URF	Unit Risk Factor
UTM	Universal Transverse Mercator
VMT	Vehicle Miles Traveled

This page intentionally left blank

EXECUTIVE SUMMARY

This report evaluates the potential health risk impacts to sensitive receptors (which are residents) and adjacent workers associated with the development of the proposed Project, more specifically, health risk impacts as a result of exposure to Toxic Air Contaminants (TACs) including diesel particulate matter (DPM) as a result of heavy-duty diesel trucks accessing the site. This section summarizes the significance criteria and Project health risks.

The results of the health risk assessment (HRA) of lifetime cancer risk from Project-generated TAC emissions are provided in Table ES-1.

Individual Exposure Scenario:

The residential land use with the greatest potential exposure to Project TAC source emissions is Location R3, which represents the planned Toll Brothers residential development located approximately 85 feet northeast of the Project site. At the maximally exposed individual receptor (MEIR), the maximum incremental cancer risk attributable to Project TAC source emissions is estimated at 0.36 in one million, which is less than the South Coast Air Quality Management District's (SCAQMD's) significance threshold of 10 in one million. At this same location, non-cancer risks were estimated to be <0.01, which would not exceed the applicable significance threshold of 1.0. Because all other modeled residential receptors are exposed to lesser concentrations and are located at a greater distance from the Project site and primary truck route than the MEIR analyzed herein, and TACs generally dissipates with distance from the source, all other residential receptors in the vicinity of the Project site would be exposed to less emissions and therefore less risk than the MEIR identified herein. As such, the Project will not cause a significant human health or cancer risk to nearby residences.

Worker Exposure Scenario:

The worker receptor land use with the greatest potential exposure to Project TAC source emissions is Location R7, which represents CRC Cloud Computer Support and Services at 26190 Enterprise Way, immediately adjacent to the Project site to the northwest. At the maximally exposed individual worker (MEIW), the maximum incremental cancer risk impact is 0.11 in one million which is less than the SCAQMD's threshold of 10 in one million. Maximum non-cancer risks at this same location were estimated to be <0.01, which would not exceed the applicable significance threshold of 1.0. Because all other modeled worker receptors are located at a greater distance than the MEIW analyze herein, and DPM dissipates with distance from the source, all other worker receptors in the vicinity of the Project would be exposed to less emissions and therefore less risk than the MEIW identified herein. As such, the Project will not cause a significant human health or cancer risk to adjacent workers.

School Child Exposure Scenario:

The school receptor land use with the greatest potential exposure to Project TAC source emissions is Location R6, which represents the existing Bella Montessori School at 26062 Prism Place, approximately 733 feet southwest of the Project site. At the maximally exposed individual school child (MEISC), the maximum incremental cancer risk impact attributable to the Project at this location is calculated to be an estimated 0.05 in one million which is less than the significance threshold of 10 in one million. At this same location, non-cancer risks attributable to the Project were calculated to be <0.01, which would not exceed the applicable significance threshold of 1.0. Any other schools near the Project site would be exposed to less emissions and consequently less impacts than what is disclosed for the MEISC. As such, the Project will not cause a significant human health or cancer risk to nearby school children.

TABLE ES-1: SUMMARY OF CANCER AND NON-CANCER RISKS

Time Period	Location	Maximum Lifetime Cancer Risk (Risk per Million)	Significance Threshold (Risk per Million)	Exceeds Significance Threshold
30 Year Exposure	Maximum Exposed Individual Receptor	0.36	10	NO
25 Year Exposure	Maximum Exposed Worker Receptor	0.11	10	NO
9 Year Exposure	Maximum Exposed School Child Receptor	0.05	10	NO
Time Period	**Location**	**Maximum Hazard Index**	**Significance Threshold**	**Exceeds Significance Threshold**
Annual Average	Maximum Exposed Sensitive Receptor	<0.01	1.0	NO
Annual Average	Maximum Exposed Worker Receptor	<0.01	1.0	NO
Annual Average	Maximum Exposed School Child Receptor	<0.01	1.0	NO

1 INTRODUCTION

The South Coast Air Quality Management District (SCAQMD) typically issues a comment letter on the Notice of Preparation of a CEQA Document. Per the SCAQMD's typical comment letter, if a proposed Project is expected to generate/attract diesel trucks, which emit diesel particulate matter (DPM) or other Toxic Air Contaminants (TACs), preparation of a HRA is necessary. This document serves to meet the SCAQMD's request for preparation of a HRA. This HRA has been prepared in accordance with the document Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis (1) and is comprised of all relevant and appropriate procedures presented by the United States Environmental Protection Agency (U.S. EPA), California EPA and SCAQMD. Cancer risk is expressed in terms of expected incremental incidence per million population. The SCAQMD has established an incidence rate of ten (10) persons per million as the maximum acceptable incremental cancer risk due to TAC exposure from a project such as the proposed Project. This threshold serves to determine whether or not a given project has a potentially significant development-specific and cumulatively considerable impact.

The AQMD has published a report on how to address cumulative impacts from air pollution: *White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution* (2). In this report the AQMD states (Page D-3):

"…the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR. The only case where the significance thresholds for project specific and cumulative impacts differ is the Hazard Index (HI) significance threshold for toxic air contaminant (TAC) emissions. The project specific (project increment) significance threshold is HI > 1.0 while the cumulative (facility-wide) is HI > 3.0. It should be noted that the HI is only one of three TAC emission significance thresholds considered (when applicable) in a CEQA analysis. The other two are the maximum individual cancer risk (MICR) and the cancer burden, both of which use the same significance thresholds (MICR of 10 in 1 million and cancer burden of 0.5) for project specific and cumulative impacts.

Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant."

The SCAQMD has also established non-carcinogenic risk parameters for use in HRAs. Non-carcinogenic risks are quantified by calculating a "hazard index," expressed as the ratio between the ambient pollutant concentration and its toxicity or Reference Exposure Level (REL). An REL is a concentration at or below which health effects are not likely to occur. A hazard index less of than one (1.0) means that adverse health effects are not expected. In this HRA, non-carcinogenic exposures of less than 1.0 are considered less-than-significant. Both the cancer risk and non-carcinogenic risk thresholds are applied to the nearest sensitive receptors below.

1.1 SITE LOCATION

The proposed Project is located at 26200 Enterprise Way in the City of Lake Forest. The nearest residential land uses are the proposed Toll Brothers Residential Development to the northeast of the Project site, and the existing residential receiver located northwest of the Project site.

The City of Lake Forest General Plan designates the Project site for Light Industrial uses. The Light Industrial designation provides for a variety of light industrial uses that are nonpolluting and which can co-exist with surrounding land uses and which do not in their maintenance, assembly, manufacturing or operations create smoke, gas, dust, noise, vibration, soot or glare which might be obnoxious or offensive to persons residing or conducting business in the City. Allowable uses include wholesale businesses, light manufacturing and processing, research and development uses, warehousing and storage, distribution and sales, high technology production, ancillary retail sales and related uses. Other uses that are determined to be compatible with the primary uses may also be allowed (3).

1.2 PROJECT DESCRIPTION

The proposed Project will demolish an existing building and replace it with 165,803 square feet (sf) of warehouse building as shown on Exhibit 1-B[1]. Consistent with the *Lake Forest Warehouses Trip Assessment*, the warehouse building has been conservatively evaluated assuming a manufacturing land use (4). The Project is anticipated to be open by the year 2023. The Project applicant also proposes to install various off-site improvements in order to enhance public safety and address concerns over pre-existing and future turning movements at five intersections within the City. The Project proposes to install these project features as a community benefit at the following five intersections: Improvements will occur at the intersections of Bake Parkway & Commercentre Drive, Dimension Drive & Commercentre Dr./Enterprise Way, Rancho Parkway & Lake Forest Drive, Bake Parkway & Dimension Drive and Dimension Drive & Lake Forest.

At the time, this HRA was prepared, the future tenants of the proposed Project were unknown. Because the operating hours of perspective building tenants is not known at this time, this HRA is intended to describe potential toxic emission impacts associated with the expected typical 24-hour, seven day per week operational activities at the Project site, which provides a conservative analysis of impacts.

As summarized in the *Lake Forest Warehouses Trip Assessment*, the Project is expected to generate a total of approximately 726 two-way vehicular trips per day (363 inbound and 363 outbound) which includes 78 two-way truck trips per day (39 inbound and 39 outbound). DPM-related impacts are associated with diesel exhaust from the 78 two-way truck trips per day generated by the Project (4).

1 For analytical purposes, up to 168,467 square feet of space is evaluated in the underlying technical modeling.

EXHIBIT 1-A: LOCATION MAP

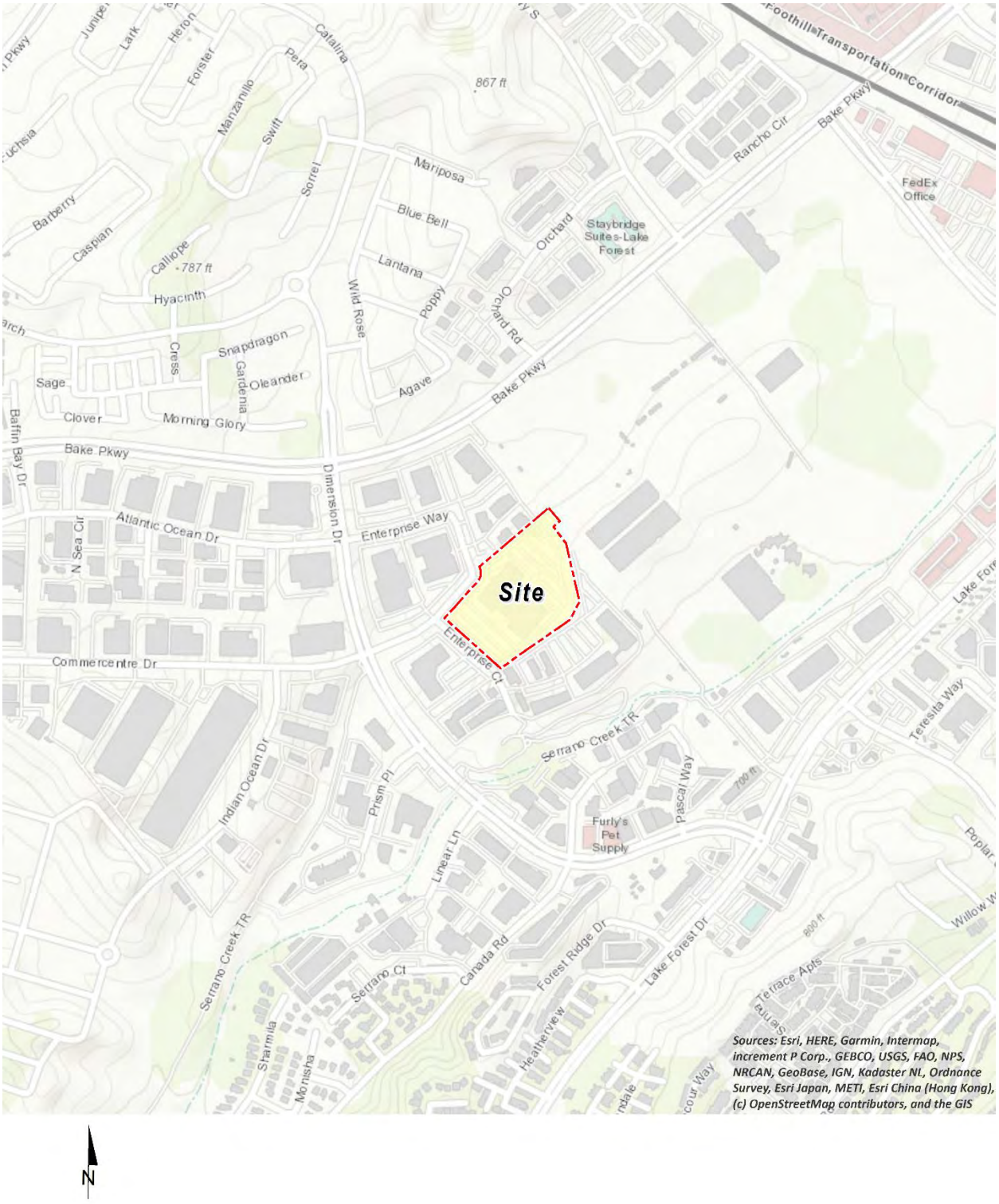
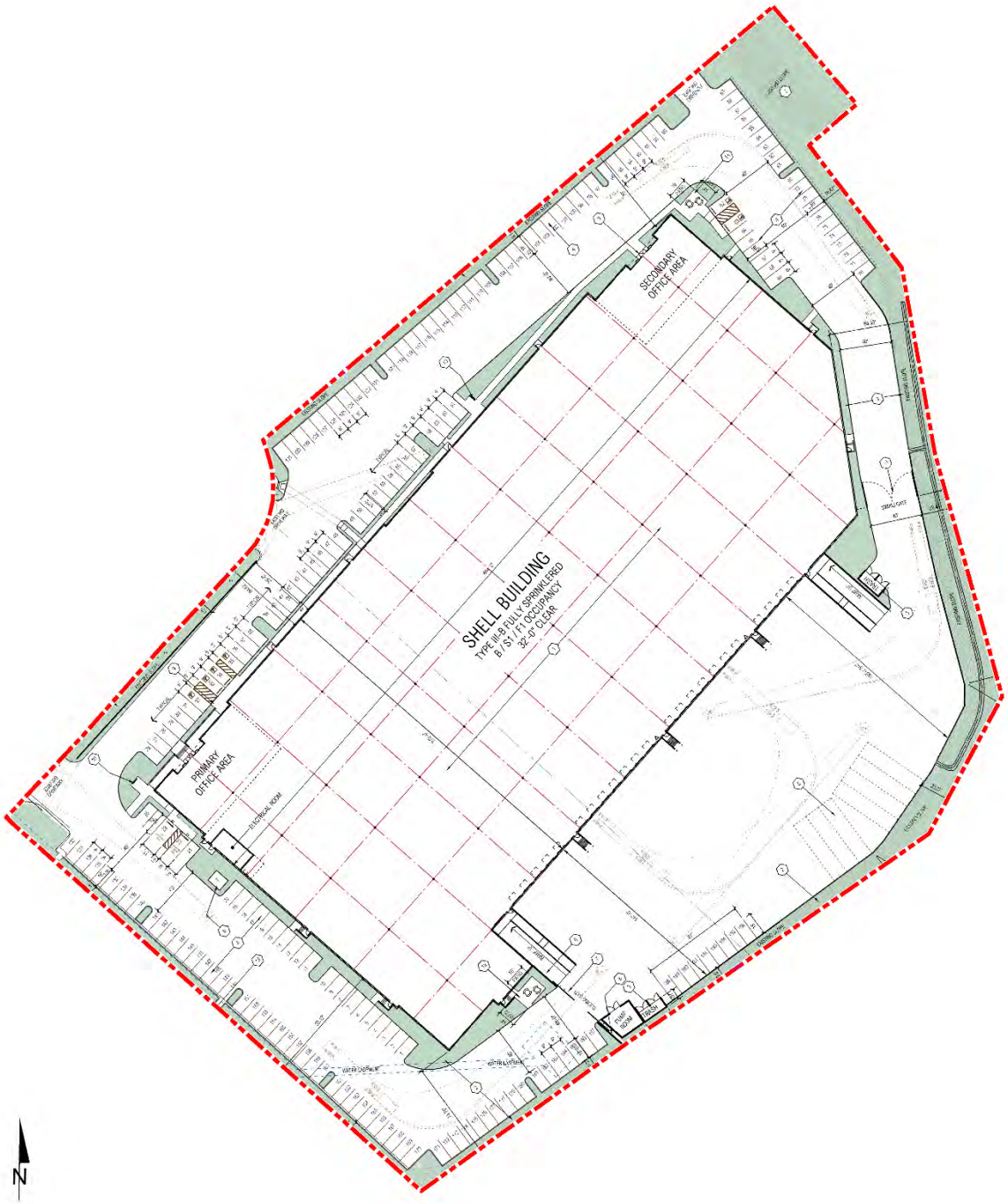


EXHIBIT 1-B: SITE PLAN



This page intentionally left blank

2 BACKGROUND

2.1 BACKGROUND ON RECOMMENDED METHODOLOGY

This HRA is based on SCAQMD guidelines to produce conservative estimates of human health risk posed by exposure to DPM. The conservative nature of this analysis is due primarily to the following factors:

- The ARB-adopted diesel exhaust Unit Risk Factor (URF) of 300 in one million per µg/m3 is based upon the upper 95 percentile of estimated risk for each of the epidemiological studies utilized to develop the URF. Using the 95th percentile URF represents a very conservative (health-protective) risk posed by DPM because it represents breathing rates that are high for the human body (95% higher than the average population).
- The emissions derived assume that every truck accessing the Project site will idle for 15 minutes under the unmitigated scenario, and this is an overestimation of actual idling times and thus conservative.[2] The California Air Resources Board (CARB's) anti-idling requirements impose a 5-minute maximum idling time and therefore the analysis conservatively overestimates DPM emissions from idling by a factor of 3.

2.2 EMISSIONS ESTIMATION

2.2.1 ON-SITE AND OFF-SITE TRUCK ACTIVITY

Vehicle DPM emissions were calculated using emission factors for particulate matter less than 10µm in diameter (PM_{10}) generated with the 2017 version of the EMission FACtor model (EMFAC) developed by the CARB. EMFAC 2017 is a mathematical model that CARB developed to calculate emission rates from motor vehicles that operate on highways, freeways, and local roads in California and is commonly used by the ARB to project changes in future emissions from on-road mobile sources (5). EMFAC 2017 is the current model approved by USEPA[3], and incorporates regional motor vehicle data, information and estimates regarding the distribution of vehicle miles traveled (VMT) by speed, and number of starts per day.

Several distinct emission processes are included in EMFAC 2017. Emission factors calculated using EMFAC 2017 are expressed in units of grams per vehicle miles traveled (g/VMT) or grams per idle-hour (g/idle-hr), depending on the emission process. The emission processes and corresponding emission factor units associated with diesel particulate exhaust for this Project are presented below.

For this Project, annual average PM_{10} emission factors were generated by running EMFAC 2017 in EMFAC Mode for vehicles in the Orange County jurisdiction. The EMFAC Mode generates

[2] Although the Project is required to comply with ARB's idling limit of 5 minutes, staff at SCAQMD recommends that the on-site idling emissions should be estimated for 15 minutes of truck idling (personal communication, in person, with Jillian Wong, December 22, 2016), which would take into account on-site idling which occurs while the trucks are waiting to pull up to the truck bays, idling at the bays, idling at check-in and check-out, etc.

[3] It should be noted that CARB Released EMFAC2021 in January 2021, however this model is not yet approved for use by USEPA. The USEPA currently recognizes EMFAC2017 as the latest approved model.

emission factors in terms of grams of pollutant emitted per vehicle activity and can calculate a matrix of emission factors at specific values of temperature, relative humidity, and vehicle speed. The model was run for speeds traveled in the vicinity of the Project. The vehicle travel speeds for each segment modeled are summarized below.

- Idling – on-site loading/unloading and truck gate
- 5 miles per hour – on-site vehicle movement including driving and maneuvering
- 25 miles per hour – off-site vehicle movement including driving and maneuvering.

Calculated emission factors are shown at Table 2-1. As a conservative measure, a 2023 EMFAC 2017 run was conducted and a static 2023 emissions factor data set was used for the entire duration of analysis herein (e.g., 30 years). Use of 2023 emission factors would overstate potential impacts since this approach assumes that emission factors remain "static" and do not change over time due to fleet turnover or cleaner technology with lower emissions that would be incorporated into vehicles after 2023. Additionally, based on EMFAC 2017, Light-Heavy-Duty Trucks are comprised of 41.2% diesel, Medium-Heavy-Duty Trucks are comprised of 78.9% diesel, and Heavy-Heavy-Duty Trucks are comprised of 91.8% diesel. Trucks fueled by diesel are accounted for by these percentages accordingly in the emissions factor generation. Appendix 2.1 includes additional details on the emissions estimates from EMFAC.

The vehicle DPM exhaust emissions were calculated for running exhaust emissions. The running exhaust emissions were calculated by applying the running exhaust PM10 emission factor (g/VMT) from EMFAC over the total distance traveled. The following equation was used to estimate off-site emissions for each of the different vehicle classes comprising the mobile sources (6):

$Emissions_{speedA}$ (g/s) = $EF_{RunExhaust}$ (g/VMT) * Distance (VMT/trip) * Number of Trips (trips/day) / seconds per day

Where:

$Emissions_{speedA}$ (g/s): Vehicle emissions at a given speed A;

$EF_{RunExhaust}$ (g/VMT): EMFAC running exhaust PM_{10} emission factor at speed A;

Distance (VMT/trip): Total distance traveled per trip.

Similar to off-site traffic, on-site vehicle running emissions were calculated by applying the running exhaust PM_{10} emission factor (g/VMT) from EMFAC and the total vehicle trip number over the length of the driving path using the same formula presented above for on-site emissions. In addition, on-site vehicle idling exhaust emissions were calculated by applying the idle exhaust PM_{10} emission factor (g/idle-hr) from EMFAC and the total truck trip over the total assumed idle time (15 minutes). The following equation was used to estimate the on-site vehicle idling emissions for each of the different vehicle classes (6):

$Emissions_{idle}$ (g/s) = EF_{idle} (g/hr) * Number of Trips (trips/day) * Idling Time (min/trip) *

60 minutes per hour / seconds per day

Where:

$Emissions_{idle}$ (g/s): Vehicle emissions during idling;

EF_{idle}(g/s): EMFAC idle exhaust PM_{10} emission factor.

TABLE 2-1: 2023 WEIGHTED AVERAGE DPM EMISSIONS FACTORS

Speed	Weighted Average
0 (idling)	0.07241 (g/idle-hr)
5	0.01240 (g/s)
25	0.00599 (g/s)

Each roadway was modeled as a line source (made up of multiple adjacent volume sources). Due to the large number of volume sources modeled for this analysis, the corresponding coordinates of each volume source have not been included in this report but are included in Appendix 2.2. The DPM emission rate for each volume source was calculated by multiplying the emission factor (based on the average travel speed along the roadway) by the number of trips and the distance traveled along each roadway segment and dividing the result by the number of volume sources along that roadway, as illustrated on Table 2-2. The modeled emission sources are illustrated on Exhibit 2-A. The modeling domain is limited to the Project's primary truck route and includes off-site sources in the study area for more than ¾ of a mile. This modeling domain is more inclusive and conservative than using only a ¼ mile modeling domain which is the distance supported by several reputable studies which conclude that the greatest potential risks occur within a ¼ mile of the primary source of emissions (7) (in the case of the Project, the primary source of emissions is the on-site idling and on-site travel).

On-site truck idling was estimated to occur as trucks enter and travel through the Project site. Although the Project's diesel-fueled truck and equipment operators will be required by State law to comply with CARB's idling limit of 5 minutes, staff at SCAQMD recommends that the on-site idling emissions be calculated assuming 15 minutes of truck idling (8), which would take into account on-site idling which occurs while the trucks are waiting to pull up to the truck bays, idling at the bays, idling at check-in and check-out, etc. As such, this analysis calculates truck idling at 15 minutes, consistent with SCAQMD's recommendation.

As summarized in the *Lake Forest Warehouse Trip Assessment*, the Project is expected to generate a total of approximately 726 two-way vehicular trips per day (363 inbound and 363 outbound) which includes 78 two-way truck trips per day (39 inbound and 39 outbound). DPM-related impacts are associated with diesel exhaust from the 78 two-way truck trips per day generated by the Project (4).

EXHIBIT 2-A: MODELED EMISSION SOURCES

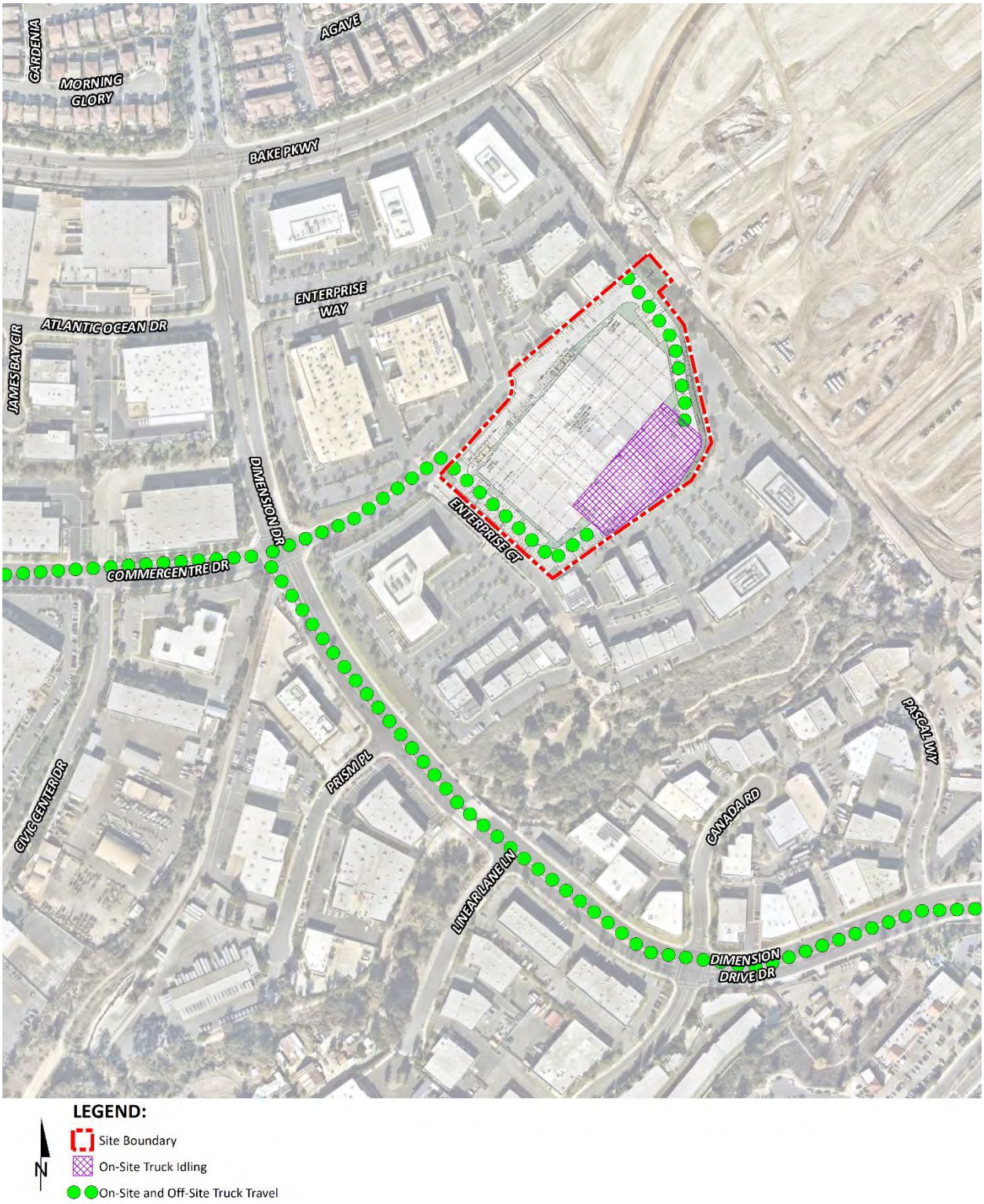


TABLE 2-2: DPM EMISSIONS FROM PROJECT TRUCKS (2023 ANALYSIS YEAR)

Truck Emission Rates						
Source	Trucks Per Day	VMT [a] (miles/day)	Truck Emission Rate [b] (grams/mile)	Truck Emission Rate [b] (grams/idle-hour)	Daily Truck Emissions [c] (grams/day)	Modeled Emission Rates (g/second)
On-Site Idling	39			0.0724	0.71	8.171E-06
On-Site Travel	78	26.47	0.0124		0.33	3.798E-06
45% Off-Site Travel	35	27.68	0.0060		0.17	1.920E-06
55% Off-Site Travel	43	28.83	0.0060		0.17	2.000E-06

[a] Vehicle miles traveled are for modeled truck route only.

[b] Emission rates determined using EMFAC 2017. Idle emission rates are expressed in grams per idle hour rather than grams per mile.

[c] This column includes the total truck travel and truck idle emissions. For idle emissions this column includes emissions based on the assumption that each truck idles for 15 minutes on-site.

2.3 EXPOSURE QUANTIFICATION

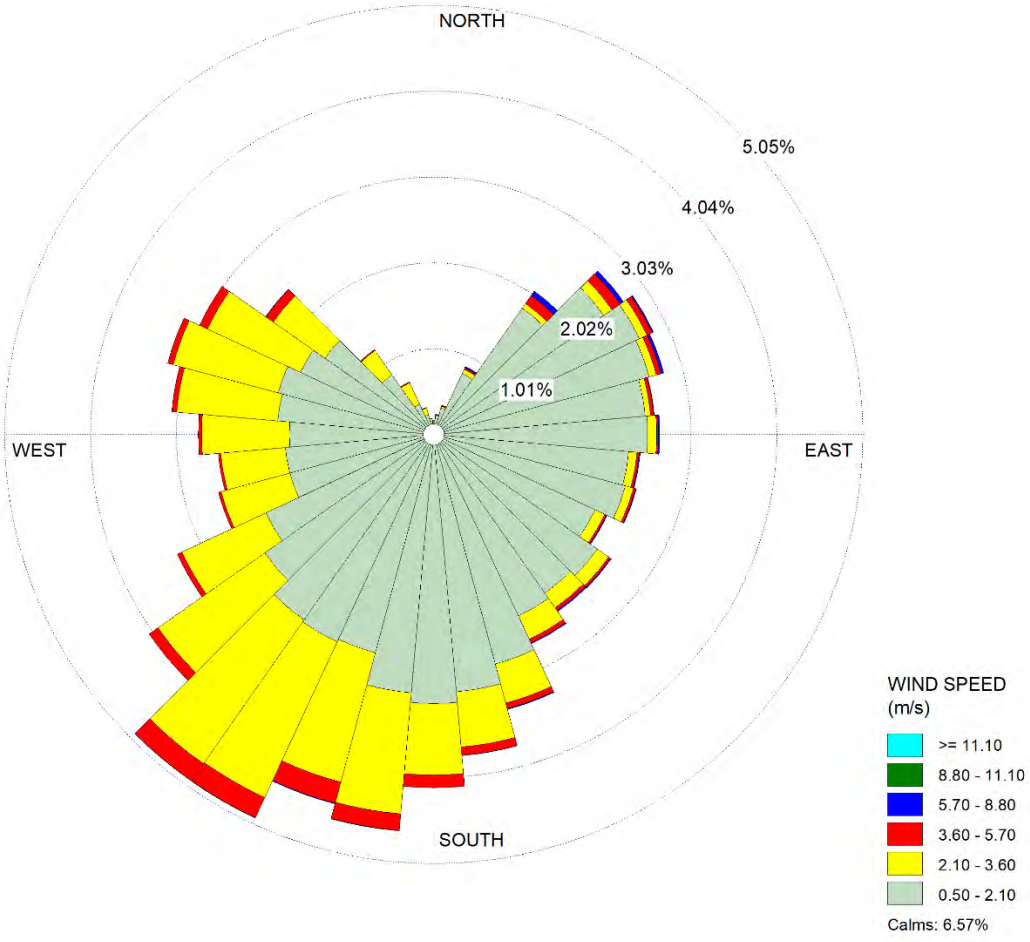
The analysis herein has been conducted in accordance with the guidelines in the Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis (1). SCAQMD recommends using the Environmental Protection Agency's (U.S. EPA's) AERMOD model. For purposes of this analysis, the Lakes AERMOD View (Version 10.0.1) was used to calculate annual average particulate concentrations associated with site operations. Lakes AERMOD View was utilized to incorporate the U.S. EPA's latest AERMOD Version 21112 (9).

The model offers additional flexibility by allowing the user to assign an initial release height and vertical dispersion parameters for mobile sources representative of a roadway. For this HRA, the roadways were modeled as adjacent volume sources. Roadways were modeled using the U.S. EPA's haul route methodology for modeling of on-site and off-site truck movement. More specifically, the Haul Road Volume Source Calculator in Lakes AERMOD View has been utilized to determine the release height parameters. Based on the US EPA methodology, the Project's modeled sources would result in a release height of 3.49 meters, and an initial lateral dimension of 4.0 meters, and an initial vertical dimension of 3.25 meters.

SCAQMD-recommended model parameters are presented in Table 2-3 (10). The model requires additional input parameters including emission data and local meteorology. Meteorological data from the SCAQMD's Mission Viejo monitoring station (SRA 19) was used to represent local weather conditions and prevailing winds (11). A wind rose exhibit of the Mission Viejo monitoring station is provided at Exhibit 2-B.

EXHIBIT 2-B: WIND ROSE (SRA 19)

WIND ROSE PLOT:	DISPLAY:
Station #93184	**Wind Speed** **Direction (blowing from)**



COMMENTS:	DATA PERIOD:	COMPANY NAME:	
	Start Date: 1/1/2011 - 00:00 **End Date: 12/31/2016 - 23:59**	**Urban Crossroads, Inc.**	
		MODELER: **HQ**	
	CALM WINDS: **6.57%**	TOTAL COUNT: **43290 hrs.**	
	AVG. WIND SPEED: **1.52 m/s**	DATE: **11/15/2021**	PROJECT NO.:

WRPLOT View - Lakes Environmental Software

TABLE 2-3: AERMOD MODEL PARAMETERS

Dispersion Coefficient (Urban/Rural)	Urban (Population 3,010,232)
Terrain (Flat/Elevated)	Elevated (Regulatory Default)
Averaging Time	1 year (5-year Meteorological Data Set)
Receptor Height	0 meters (Regulatory Default)

Universal Transverse Mercator (UTM) coordinates for World Geodetic System (WGS) 84 were used to locate the Project site boundaries, each volume source location, and receptor locations in the Project site's vicinity. The AERMOD dispersion model summary output files for the proposed Project are presented in Appendix 2.2. Modeled sensitive receptors were placed at residential and non-residential locations.

Receptors may be placed at applicable structure locations for residential and worker property and not necessarily the boundaries of the properties containing these uses because the human receptors (residents and workers) spend a majority of their time at the residence or in the workplace's building, and not on the property line. It should be noted that the primary purpose of receptor placement is focused on long-term exposure. For example, the HRA evaluates the potential health risks to residents and workers over a period of 30 or 25 years of exposure, respectively. Notwithstanding, as a conservative measure, receptors were placed at either the outdoor living area or the building façade, whichever is closer to the Project site.

For purposes of this HRA, receptors include both residential and non-residential (worker and school) land uses in the vicinity of the Project. These receptors are included in the HRA since residents, workers, and school children may be exposed at these locations over a long-term duration of 30, 25, and 9 years, respectively. This methodology is consistent with SCAQMD and OEHHA recommended guidance.

Any impacts to residents or workers located further away from the Project site than the modeled residential and workers would have a lesser impact than what has already been disclosed in the HRA at the MEIR, MEIW, and MEISC because concentrations dissipate with distance.

Consistent with SCAQMD modeling guidance, all receptors were set to existing elevation height so that only ground-level concentrations are analyzed (12). United States Geological Survey (USGS) Digital Elevation Model (DEM) terrain data based on a 7.5-minute topographic quadrangle map series using AERMAP was utilized in the HRA modeling to set elevations.

Discrete variants for daily breathing rates, exposure frequency, and exposure duration were obtained from relevant distribution profiles presented in the 2015 OEHHA Guidelines. Tables 2-4 through 2-6 summarize the Exposure Parameters for Residents and Workers based on 2015 OEHHA Guidelines. Appendix 2.3 includes the detailed risk calculation.

TABLE 2-4: EXPOSURE ASSUMPTIONS FOR INDIVIDUAL CANCER RISK (30 YEAR RESIDENTIAL)

Age	Daily Breathing Rate (L/kg-day)	Age Sensitivity Factor	Exposure Duration (years)	Fraction of Time at Home	Exposure Frequency (days/year)	Exposure Time (hours/day)
-0.25 to 0	361	10	0.25	0.85	350	24
0 to 2	1090	10	2	0.85	350	24
2 to 16	572	3	14	0.72	350	24
16 to 30	261	1	14	0.73	350	24

TABLE 2-5: EXPOSURE ASSUMPTIONS FOR INDIVIDUAL CANCER RISK (25 YEAR WORKER)

Age	Daily Breathing Rate (L/kg-day)	Age Sensitivity Factor	Exposure Duration (years)	Exposure Frequency (days/year)	Exposure Time (hours/day)
16 to 41	230	1	25	250	12

TABLE 2-6: EXPOSURE ASSUMPTIONS FOR INDIVIDUAL CANCER RISK (9 YEAR SCHOOL CHILD)

Age	Daily Breathing Rate (L/kg-day)	Age Sensitivity Factor	Exposure Duration (years)	Exposure Frequency (days/year) [a]	Exposure Time (hours/day)
9 year duration	572	3	9	180	12

[a] To represent the unique characteristics of the school-based population, the assessment employed the U.S. Environmental Protection Agency's guidance to develop viable dose estimates based on reasonable maximum exposures (RME). RME's are defined as the "highest exposure that is reasonably expected to occur" for a given receptor population. As a result, lifetime risk values for the student population were adjusted to account for an exposure duration of 180 days per year for nine (9) years. The 9 year exposure duration is also consistent with OEHHA Recommendations and consistent with the exposure duration utilized in school-based risk assessments for various schools within the Los Angeles County Unified School District (LAUSD) that have been accepted by the SCAQMD.

2.4 CARCINOGENIC CHEMICAL RISK

The SCAQMD CEQA Air Quality Handbook (1993) states that emissions of toxic air contaminants (TACs) are considered significant if a HRA shows an increased risk of greater than 10 in one million. Based on guidance from the SCAQMD in the document Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis (1), for purposes of this analysis, 10 in one million is used as the cancer risk threshold for the proposed Project.

Excess cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer over a lifetime as a direct result of exposure to potential carcinogens over a specified exposure duration. The estimated risk is expressed as a unitless probability. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the chemical-specific cancer potency factor (CPF). A risk level of 10 in one million implies a likelihood that up to 10 people, out of one million equally exposed people would contract cancer if exposed continuously (24 hours per day) to the levels of toxic air contaminants over a specified duration of time.

Guidance from CARB and the California Environmental Protection Agency, Office of Environmental Health Hazard Assessment (OEHHA) recommends a refinement to the standard point estimate approach when alternate human body weights and breathing rates are utilized to assess risk for susceptible subpopulations such as children. For the inhalation pathway, the procedure requires the incorporation of several discrete variates to effectively quantify dose. Once determined, contaminant dose is multiplied by the cancer potency factor (CPF) in units of inverse dose expressed in milligrams per kilogram per day (mg/kg/day)-1 to derive the cancer risk estimate. Therefore, to assess exposures, the following dose algorithm was utilized.

$$DOSEair = (Cair \times [BR/BW] \times A \times EF) \times (1 \times 10^{-6})$$

Where:

DOSEair = chronic daily intake (mg/kg/day)

Cair = concentration of contaminant in air (ug/m3)

[BR/BW] = daily breathing rate normalized to body weight (L/kg BW-day)

A = inhalation absorption factor

EF = exposure frequency (days/365 days)

BW = body weight (kg)

1×10^{-6} = conversion factors (ug to mg, L to m3)

$$RISKair = DOSEair \times CPF \times ED/AT$$

Where:

DOSEair = chronic daily intake (mg/kg/day)

CPF = cancer potency factor

ED = number of years within particular age group

AT = averaging time

2.5 NON-CARCINOGENIC EXPOSURES

An evaluation of the potential noncarcinogenic effects of chronic exposures was also conducted. Adverse health effects are evaluated by comparing a compound's annual concentration with its toxicity factor or Reference Exposure Level (REL). The REL for diesel particulates was obtained from OEHHA for this analysis. The chronic reference exposure level (REL) for DPM was established by OEHHA as 5 $\mu g/m^3$ (OEHHA Toxicity Criteria Database, http://www.oehha.org/risk/chemicaldb/index.asp).

The non-cancer hazard index was calculated (consistent with SCAQMD methodology) as follows:

The relationship for the non-cancer health effects of DPM is given by the following equation:

$$HI_{DPM} = C_{DPM}/REL_{DPM}$$

Where:

HI_{DPM} = Hazard Index; an expression of the potential for non-cancer health effects.

C_{DPM} = Annual average DPM concentration ($\mu g/m^3$).

REL_{DPM} = Reference exposure level (REL) for DPM; the DPM concentration at which no adverse health effects are anticipated.

For purposes of this analysis the hazard index for the respiratory endpoint totaled less than one for all receptors in the project vicinity, and thus is less than significant.

2.6 POTENTIAL PROJECT-RELATED TAC SOURCE CANCER AND NON-CANCER RISKS

Individual Exposure Scenario:

The residential land use with the greatest potential exposure to Project TAC source emissions is Location R3, which represents the planned Toll Brothers residential development located approximately 85 feet northeast of the Project site. At the maximally exposed individual receptor (MEIR), the maximum incremental cancer risk attributable to Project TAC source emissions is estimated at 0.36 in one million, which is less than the South Coast Air Quality Management District's (SCAQMD's) significance threshold of 10 in one million. At this same location, non-cancer risks were estimated to be <0.01, which would not exceed the applicable significance threshold of 1.0. Because all other modeled residential receptors are exposed to lesser concentrations and are located at a greater distance from the Project site and primary truck route than the MEIR analyzed herein, and TACs generally dissipates with distance from the source, all other residential receptors in the vicinity of the Project site would be exposed to less emissions and therefore less risk than the MEIR identified herein. As such, the Project will not cause a significant human health or cancer risk to nearby residences. The nearest modeled receptors are illustrated on Exhibit 2-C.

EXHIBIT 2-C: MODELED RECEPTORS

Worker Exposure Scenario[4]*:*

The worker receptor land use with the greatest potential exposure to Project TAC source emissions is Location R7, which represents CRC Cloud Computer Support and Services at 26190 Enterprise Way, immediately adjacent to the Project site to the northwest. At the maximally exposed individual worker (MEIW), the maximum incremental cancer risk impact is 0.11 in one million which is less than the SCAQMD's threshold of 10 in one million. Maximum non-cancer risks at this same location were estimated to be <0.01, which would not exceed the applicable significance threshold of 1.0. Because all other modeled worker receptors are located at a greater distance than the MEIW analyze herein, and DPM dissipates with distance from the source, all other worker receptors in the vicinity of the Project would be exposed to less emissions and therefore less risk than the MEIW identified herein. As such, the Project will not cause a significant human health or cancer risk to adjacent workers. The nearest modeled receptors are illustrated on Exhibit 2-C.

School Child Exposure Scenario:

The school receptor land use with the greatest potential exposure to Project TAC source emissions is Location R6, which represents the existing Bella Montessori School at 26062 Prism Place, approximately 733 feet southwest of the Project site. At the maximally exposed individual school child (MEISC), the maximum incremental cancer risk impact attributable to the Project at this location is calculated to be an estimated 0.05 in one million which is less than the significance threshold of 10 in one million. At this same location, non-cancer risks attributable to the Project were calculated to be <0.01, which would not exceed the applicable significance threshold of 1.0. Any other schools near the Project site would be exposed to less emissions and consequently less impacts than what is disclosed for the MEISC. As such, the Project will not cause a significant human health or cancer risk to nearby school children. The nearest modeled receptors are illustrated on Exhibit 2-C.

4 SCAQMD guidance does not require assessment of the potential health risk to on-site workers. Excerpts from the document OEHHA Air Toxics Hot Spots Program Risk Assessment Guidelines—The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (OEHHA 2003), also indicate that it is not necessary to examine the health effects to on-site workers unless required by RCRA (Resource Conservation and Recovery Act) / CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act) or the worker resides on-site.

This page intentionally left blank

3 REFERENCES

1. **South Coast Air Quality Managment District.** Mobile Source Toxics Analysis. [Online] 2003. http://www.aqmd.gov/ceqa/handbook/mobile_toxic/mobile_toxic.html.
2. **Goss, Tracy A and Kroeger, Amy.** White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution. [Online] South Coast Air Quality Management District, 2003. [Cited: June 6, 2019.] http://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/cumulative-impacts-working-group/cumulative-impacts-white-paper.pdf?sfvrsn=2.
3. **City of Lake Forest.** City of Lake Forest Land Use and Design. [Online] https://www.lakeforestca.gov/DocumentCenter/View/10649/Land-Use-and-Design-Element.
4. **Urban Crossroads, Inc.** *Lake Forest Warehouses Trip Assessment.* 2021.
5. **California Air Resources Board.** EMFAC 2017. [Online] https://www.arb.ca.gov/emfac/2017/.
6. **California Department of Transportation.** EMFAC Software. [Online] http://www.dot.ca.gov/hq/env/air/pages/emfac.htm.
7. **Air Resources Board.** *Air Quality and Land Use Handbook: A Community Health Perspective.* 2005.
8. **Wong, Jillian.** *Planning, Rule Development & Area Sources.* December 22, 2016.
9. **Environmental Protection Agency.** User's Guide for the AMS/EPA Regulatory Model (AERMOD). [Online] 2021. https://www3.epa.gov/ttn/scram/models/aermod/aermod_userguide.pdf.
10. —. User's Guide for the AMS/EPA Regulatory Model (AERMOD). [Online] April 2018. https://www3.epa.gov/ttn/scram/models/aermod/aermod_userguide.pdf.
11. **South Coast Air Quality Management District.** Data for AERMOD. [Online] [Cited: June 10, 2019.] https://www.aqmd.gov/home/air-quality/air-quality-data-studies/meteorological-data/data-for-aermod.
12. —. South Coast AQMD Modeling Guidance for AERMOD. [Online] [Cited: September 18, 2019.] http://www.aqmd.gov/home/air-quality/meteorological-data/modeling-guidance.

This page intentionally left blank

4 CERTIFICATIONS

The contents of this health risk assessment represent an accurate depiction of the impacts to sensitive receptors associated with the proposed Lake Forest Warehouse Project. The information contained in this health risk assessment report is based on the best available data at the time of preparation. If you have any questions, please contact me at (949) 660-1994.

Haseeb Qureshi
Principal
URBAN CROSSROADS, INC.
(949) 660-1994
hqureshi@urbanxroads.com

EDUCATION

Master of Science in Environmental Studies
California State University, Fullerton • May 2010

Bachelor of Arts in Environmental Analysis and Design
University of California, Irvine • June 2006

PROFESSIONAL AFFILIATIONS

AEP – Association of Environmental Planners
AWMA – Air and Waste Management Association
ASTM – American Society for Testing and Materials

PROFESSIONAL CERTIFICATIONS

Environmental Site Assessment – American Society for Testing and Materials • June 2013
Planned Communities and Urban Infill – Urban Land Institute • June 2011
Indoor Air Quality and Industrial Hygiene – EMSL Analytical • April 2008
Principles of Ambient Air Monitoring – California Air Resources Board • August 2007
AB2588 Regulatory Standards – Trinity Consultants • November 2006
Air Dispersion Modeling – Lakes Environmental • June 2006

This page intentionally left blank

APPENDIX 2.1:

EMFAC EMISSIONS SUMMARY

This page intentionally left blank

AVERAGE EMISSION FACTOR
ORANGE COUNTY 2023

Speed	LHD1	MHD	HHD
0	0.327209	0.022092	0.01487
5	0.018884	0.00421	0.01324
25	0.007544	0.002221	0.00680

Speed	**Weighted Average Emissions**
0	**0.07241**
5	**0.01240**
25	**0.00599**

Emission Rates - 2023 Emission Factors

Truck Emission Rates						
Source	Trucks Per Day	VMT [a] (miles/day)	Truck Emission Rate [b] (grams/mile)	Truck Emission Rate [b] (grams/idle-hour)	Daily Truck Emissions [c] (grams/day)	Modeled Emission Rates (g/second)
On-Site Idling	39			0.0724	0.71	8.171E-06
On-Site Travel	78	26.47	0.0124		0.33	3.798E-06
45% Off-Site Travel	35	27.68	0.0060		0.17	1.920E-06
55% Off-Site Travel	43	28.83	0.0060		0.17	2.000E-06

[a] Vehicle miles traveled are for modeled truck route only.

[b] Emission rates determined using EMFAC 2017. Idle emission rates are expressed in grams per idle hour rather than grams per mile.

[c] This column includes the total truck travel and truck idle emissions. For idle emissions this column includes emissions based on the assumption that each truck idles for 15 minutes on-site.

calendar_y	season_m	sub_area	vehicle_cl	fuel	temperatu	relative_h	process	speed_tim	pollutant	emission_rate
2023	Annual	Orange (S	HHDT	Dsl	60	70	RUNEX	5	PM10	0.01442
2023	Annual	Orange (S	HHDT	Dsl	60	70	RUNEX	25	PM10	0.0074
2023	Annual	Orange (S	LHDT1	Dsl	60	70	RUNEX	5	PM10	0.04574
2023	Annual	Orange (S	LHDT1	Dsl	60	70	RUNEX	25	PM10	0.01827
2023	Annual	Orange (S	MHDT	Dsl	60	70	RUNEX	5	PM10	0.00533
2023	Annual	Orange (S	MHDT	Dsl	60	70	RUNEX	25	PM10	0.00281
2023	Annual	Orange (S	HHDT	Dsl			IDLEX		PM10	0.01619
2023	Annual	Orange (S	LHDT1	Dsl			IDLEX		PM10	0.79254
2023	Annual	Orange (S	MHDT	Dsl			IDLEX		PM10	0.02798

Source: EMFAC2017 (v1.0.3) Emissions Inventory
Region Type: County
Region: Orange
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/year for VMT, trips/year for Trips, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

Region	Calendar Y	Vehicle Ca	Model Yea	Speed	Fuel	Population
Orange	2023	HHDT	Aggregate	Aggregate	Gasoline	9.81119
Orange	2023	HHDT	Aggregate	Aggregate	Diesel	11158.8
Orange	2023	HHDT	Aggregate	Aggregate	Natural G	985.399
Orange	2023	LHDT1	Aggregate	Aggregate	Gasoline	35833.4
Orange	2023	LHDT1	Aggregate	Aggregate	Diesel	25197.2
Orange	2023	MHDT	Aggregate	Aggregate	Gasoline	7500.79
Orange	2023	MHDT	Aggregate	Aggregate	Diesel	28148.2

HHDT% GAS/NG	0.08188
HHDT% DSL	0.91812
LHDT1% GAS	0.58714
LHDT1% DSL	0.41286
MHDT% GAS	0.21041
MHDT% DSL	0.78959

APPENDIX 2.2:

AERMOD MODEL INPUT/OUTPUT

This page intentionally left blank

```
** Lakes Environmental AERMOD MPI
**
**************************************
**
** AERMOD INPUT PRODUCED BY:
** AERMOD VIEW VER. 10.0.1
** LAKES ENVIRONMENTAL SOFTWARE INC.
** DATE: 11/15/2021
** FILE: C:\LAKES\AERMOD VIEW\14042-04 HRA\14042-04 HRA.ADI
**
**************************************
**
**
**************************************
** AERMOD CONTROL PATHWAY
**************************************
**
**
CO STARTING
   TITLEONE C:\LAKES\AERMOD VIEW\14042-04 HRA\14042-04 HRA.ISC
   MODELOPT DFAULT CONC
   AVERTIME ANNUAL
   URBANOPT 3010232
   POLLUTID DPM
   RUNORNOT RUN
   ERRORFIL "14042-04 HRA.ERR"
CO FINISHED
**
**************************************
** AERMOD SOURCE PATHWAY
**************************************
**
**
SO STARTING
** SOURCE LOCATION **
** SOURCE ID - TYPE - X COORD. - Y COORD. **
** ----------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE1
** DESCRSRC ON-SITE IDLING
** PREFIX
** LENGTH OF SIDE = 8.59
** CONFIGURATION = ADJACENT
** EMISSION RATE = 8.171E-06
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.25
** NODES = 2
** 437659.349, 3725219.025, 210.55, 3.49, 4.00
** 437728.009, 3725295.963, 218.31, 3.49, 4.00
** ----------------------------------------------------------------------
```

```
   LOCATION L0002141     VOLUME   437662.209 3725222.229 210.87
   LOCATION L0002142     VOLUME   437667.928 3725228.638 211.52
   LOCATION L0002143     VOLUME   437673.648 3725235.047 212.17
   LOCATION L0002144     VOLUME   437679.367 3725241.456 212.81
   LOCATION L0002145     VOLUME   437685.087 3725247.866 213.46
   LOCATION L0002146     VOLUME   437690.806 3725254.275 214.11
   LOCATION L0002147     VOLUME   437696.526 3725260.684 214.75
   LOCATION L0002148     VOLUME   437702.245 3725267.093 215.40
   LOCATION L0002149     VOLUME   437707.965 3725273.502 216.04
   LOCATION L0002150     VOLUME   437713.684 3725279.911 216.69
   LOCATION L0002151     VOLUME   437719.404 3725286.320 217.34
   LOCATION L0002152     VOLUME   437725.123 3725292.729 217.98
** END OF LINE VOLUME SOURCE ID = SLINE1
** ----------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE2
** DESCRSRC ON-SITE TRAVEL
** PREFIX
** LENGTH OF SIDE = 8.59
** CONFIGURATION = ADJACENT
** EMISSION RATE = 3.798E-06
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.25
** NODES = 8
** 437546.377, 3725251.163, 204.55, 3.49, 4.00
** 437633.784, 3725173.008, 208.95, 3.49, 4.00
** 437742.861, 3725263.824, 217.01, 3.49, 4.00
** 437746.270, 3725300.589, 218.14, 3.49, 4.00
** 437735.800, 3725356.588, 216.96, 3.49, 4.00
** 437702.201, 3725404.552, 211.63, 3.49, 4.00
** 437657.158, 3725371.683, 207.64, 3.49, 4.00
** 437603.107, 3725314.467, 209.11, 3.49, 4.00
** ----------------------------------------------------------------------
   LOCATION L0002153     VOLUME   437549.579 3725248.301 204.71
   LOCATION L0002154     VOLUME   437555.982 3725242.575 205.03
   LOCATION L0002155     VOLUME   437562.386 3725236.849 205.36
   LOCATION L0002156     VOLUME   437568.789 3725231.124 205.68
   LOCATION L0002157     VOLUME   437575.193 3725225.398 206.00
   LOCATION L0002158     VOLUME   437581.596 3725219.672 206.32
   LOCATION L0002159     VOLUME   437588.000 3725213.947 206.65
   LOCATION L0002160     VOLUME   437594.403 3725208.221 206.97
   LOCATION L0002161     VOLUME   437600.807 3725202.495 207.29
   LOCATION L0002162     VOLUME   437607.210 3725196.769 207.61
   LOCATION L0002163     VOLUME   437613.614 3725191.044 207.93
   LOCATION L0002164     VOLUME   437620.017 3725185.318 208.26
   LOCATION L0002165     VOLUME   437626.421 3725179.592 208.58
   LOCATION L0002166     VOLUME   437632.824 3725173.867 208.90
   LOCATION L0002167     VOLUME   437639.396 3725177.680 209.36
   LOCATION L0002168     VOLUME   437645.997 3725183.177 209.85
   LOCATION L0002169     VOLUME   437652.599 3725188.673 210.34
```

```
   LOCATION L0002170     VOLUME   437659.200 3725194.169 210.83
   LOCATION L0002171     VOLUME   437665.802 3725199.665 211.32
   LOCATION L0002172     VOLUME   437672.403 3725205.162 211.80
   LOCATION L0002173     VOLUME   437679.005 3725210.658 212.29
   LOCATION L0002174     VOLUME   437685.606 3725216.154 212.78
   LOCATION L0002175     VOLUME   437692.207 3725221.650 213.27
   LOCATION L0002176     VOLUME   437698.809 3725227.147 213.75
   LOCATION L0002177     VOLUME   437705.410 3725232.643 214.24
   LOCATION L0002178     VOLUME   437712.012 3725238.139 214.73
   LOCATION L0002179     VOLUME   437718.613 3725243.636 215.22
   LOCATION L0002180     VOLUME   437725.215 3725249.132 215.71
   LOCATION L0002181     VOLUME   437731.816 3725254.628 216.19
   LOCATION L0002182     VOLUME   437738.417 3725260.124 216.68
   LOCATION L0002183     VOLUME   437743.120 3725266.620 217.10
   LOCATION L0002184     VOLUME   437743.913 3725275.173 217.36
   LOCATION L0002185     VOLUME   437744.706 3725283.727 217.62
   LOCATION L0002186     VOLUME   437745.499 3725292.280 217.88
   LOCATION L0002187     VOLUME   437746.225 3725300.830 218.13
   LOCATION L0002188     VOLUME   437744.646 3725309.274 217.96
   LOCATION L0002189     VOLUME   437743.067 3725317.718 217.78
   LOCATION L0002190     VOLUME   437741.489 3725326.161 217.60
   LOCATION L0002191     VOLUME   437739.910 3725334.605 217.42
   LOCATION L0002192     VOLUME   437738.331 3725343.049 217.25
   LOCATION L0002193     VOLUME   437736.753 3725351.492 217.07
   LOCATION L0002194     VOLUME   437733.846 3725359.378 216.65
   LOCATION L0002195     VOLUME   437728.918 3725366.413 215.87
   LOCATION L0002196     VOLUME   437723.989 3725373.449 215.09
   LOCATION L0002197     VOLUME   437719.061 3725380.484 214.30
   LOCATION L0002198     VOLUME   437714.132 3725387.520 213.52
   LOCATION L0002199     VOLUME   437709.204 3725394.555 212.74
   LOCATION L0002200     VOLUME   437704.275 3725401.591 211.96
   LOCATION L0002201     VOLUME   437698.183 3725401.620 211.27
   LOCATION L0002202     VOLUME   437691.244 3725396.557 210.66
   LOCATION L0002203     VOLUME   437684.305 3725391.493 210.04
   LOCATION L0002204     VOLUME   437677.366 3725386.430 209.43
   LOCATION L0002205     VOLUME   437670.427 3725381.366 208.82
   LOCATION L0002206     VOLUME   437663.488 3725376.303 208.20
   LOCATION L0002207     VOLUME   437656.640 3725371.135 207.65
   LOCATION L0002208     VOLUME   437650.742 3725364.891 207.81
   LOCATION L0002209     VOLUME   437644.843 3725358.647 207.97
   LOCATION L0002210     VOLUME   437638.944 3725352.403 208.14
   LOCATION L0002211     VOLUME   437633.045 3725346.158 208.30
   LOCATION L0002212     VOLUME   437627.146 3725339.914 208.46
   LOCATION L0002213     VOLUME   437621.247 3725333.670 208.62
   LOCATION L0002214     VOLUME   437615.348 3725327.425 208.78
   LOCATION L0002215     VOLUME   437609.449 3725321.181 208.94
   LOCATION L0002216     VOLUME   437603.551 3725314.937 209.10
** END OF LINE VOLUME SOURCE ID = SLINE2
** ------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
```

```
** LINE VOLUME SOURCE ID = SLINE3
** DESCRSRC 45% OFF-SITE TRAVEL
** PREFIX
** LENGTH OF SIDE = 8.59
** CONFIGURATION = ADJACENT
** EMISSION RATE = 1.92E-06
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.25
** NODES = 14
** 437585.237, 3725312.532, 208.67, 3.49, 4.00
** 437530.162, 3725248.916, 203.14, 3.49, 4.00
** 437505.127, 3725225.649, 200.92, 3.49, 4.00
** 437491.285, 3725217.108, 200.14, 3.49, 4.00
** 437452.703, 3725199.436, 199.89, 3.49, 4.00
** 437389.086, 3725178.820, 206.77, 3.49, 4.00
** 437314.463, 3725160.669, 214.10, 3.49, 4.00
** 437238.403, 3725156.536, 218.18, 3.49, 4.00
** 437001.543, 3725159.016, 209.01, 3.49, 4.00
** 436672.915, 3725162.323, 222.37, 3.49, 4.00
** 436615.870, 3725166.870, 209.90, 3.49, 4.00
** 436521.622, 3725192.912, 204.57, 3.49, 4.00
** 436469.124, 3725215.647, 197.99, 3.49, 4.00
** 436391.411, 3725269.385, 191.05, 3.49, 4.00
** ----------------------------------------------------------------------
   LOCATION L0002217     VOLUME   437582.426 3725309.285 208.39
   LOCATION L0002218     VOLUME   437576.804 3725302.791 207.82
   LOCATION L0002219     VOLUME   437571.181 3725296.297 207.26
   LOCATION L0002220     VOLUME   437565.559 3725289.802 206.69
   LOCATION L0002221     VOLUME   437559.936 3725283.308 206.13
   LOCATION L0002222     VOLUME   437554.314 3725276.814 205.57
   LOCATION L0002223     VOLUME   437548.691 3725270.319 205.00
   LOCATION L0002224     VOLUME   437543.069 3725263.825 204.44
   LOCATION L0002225     VOLUME   437537.447 3725257.331 203.87
   LOCATION L0002226     VOLUME   437531.824 3725250.836 203.31
   LOCATION L0002227     VOLUME   437525.730 3725244.797 202.75
   LOCATION L0002228     VOLUME   437519.438 3725238.949 202.19
   LOCATION L0002229     VOLUME   437513.146 3725233.101 201.63
   LOCATION L0002230     VOLUME   437506.854 3725227.253 201.07
   LOCATION L0002231     VOLUME   437499.823 3725222.376 200.62
   LOCATION L0002232     VOLUME   437492.513 3725217.865 200.21
   LOCATION L0002233     VOLUME   437484.787 3725214.131 200.10
   LOCATION L0002234     VOLUME   437476.977 3725210.554 200.05
   LOCATION L0002235     VOLUME   437469.167 3725206.977 200.00
   LOCATION L0002236     VOLUME   437461.357 3725203.400 199.95
   LOCATION L0002237     VOLUME   437453.547 3725199.823 199.90
   LOCATION L0002238     VOLUME   437445.415 3725197.075 200.68
   LOCATION L0002239     VOLUME   437437.243 3725194.426 201.56
   LOCATION L0002240     VOLUME   437429.072 3725191.778 202.45
   LOCATION L0002241     VOLUME   437420.900 3725189.130 203.33
   LOCATION L0002242     VOLUME   437412.729 3725186.482 204.21
```

LOCATION L0002243 VOLUME 437404.557 3725183.834 205.10
LOCATION L0002244 VOLUME 437396.385 3725181.185 205.98
LOCATION L0002245 VOLUME 437388.195 3725178.603 206.86
LOCATION L0002246 VOLUME 437379.848 3725176.573 207.68
LOCATION L0002247 VOLUME 437371.502 3725174.543 208.50
LOCATION L0002248 VOLUME 437363.155 3725172.513 209.32
LOCATION L0002249 VOLUME 437354.808 3725170.483 210.14
LOCATION L0002250 VOLUME 437346.462 3725168.452 210.96
LOCATION L0002251 VOLUME 437338.115 3725166.422 211.78
LOCATION L0002252 VOLUME 437329.768 3725164.392 212.60
LOCATION L0002253 VOLUME 437321.422 3725162.362 213.42
LOCATION L0002254 VOLUME 437313.037 3725160.592 214.18
LOCATION L0002255 VOLUME 437304.459 3725160.126 214.64
LOCATION L0002256 VOLUME 437295.882 3725159.659 215.10
LOCATION L0002257 VOLUME 437287.305 3725159.193 215.56
LOCATION L0002258 VOLUME 437278.727 3725158.727 216.02
LOCATION L0002259 VOLUME 437270.150 3725158.261 216.48
LOCATION L0002260 VOLUME 437261.573 3725157.795 216.94
LOCATION L0002261 VOLUME 437252.995 3725157.329 217.40
LOCATION L0002262 VOLUME 437244.418 3725156.863 217.86
LOCATION L0002263 VOLUME 437235.837 3725156.562 218.08
LOCATION L0002264 VOLUME 437227.248 3725156.652 217.75
LOCATION L0002265 VOLUME 437218.658 3725156.742 217.42
LOCATION L0002266 VOLUME 437210.069 3725156.832 217.08
LOCATION L0002267 VOLUME 437201.479 3725156.922 216.75
LOCATION L0002268 VOLUME 437192.889 3725157.012 216.42
LOCATION L0002269 VOLUME 437184.300 3725157.102 216.09
LOCATION L0002270 VOLUME 437175.710 3725157.192 215.75
LOCATION L0002271 VOLUME 437167.121 3725157.282 215.42
LOCATION L0002272 VOLUME 437158.531 3725157.372 215.09
LOCATION L0002273 VOLUME 437149.942 3725157.462 214.76
LOCATION L0002274 VOLUME 437141.352 3725157.552 214.42
LOCATION L0002275 VOLUME 437132.763 3725157.642 214.09
LOCATION L0002276 VOLUME 437124.173 3725157.732 213.76
LOCATION L0002277 VOLUME 437115.584 3725157.822 213.43
LOCATION L0002278 VOLUME 437106.994 3725157.912 213.09
LOCATION L0002279 VOLUME 437098.405 3725158.002 212.76
LOCATION L0002280 VOLUME 437089.815 3725158.091 212.43
LOCATION L0002281 VOLUME 437081.226 3725158.181 212.09
LOCATION L0002282 VOLUME 437072.636 3725158.271 211.76
LOCATION L0002283 VOLUME 437064.047 3725158.361 211.43
LOCATION L0002284 VOLUME 437055.457 3725158.451 211.10
LOCATION L0002285 VOLUME 437046.867 3725158.541 210.76
LOCATION L0002286 VOLUME 437038.278 3725158.631 210.43
LOCATION L0002287 VOLUME 437029.688 3725158.721 210.10
LOCATION L0002288 VOLUME 437021.099 3725158.811 209.77
LOCATION L0002289 VOLUME 437012.509 3725158.901 209.43
LOCATION L0002290 VOLUME 437003.920 3725158.991 209.10
LOCATION L0002291 VOLUME 436995.330 3725159.078 209.26
LOCATION L0002292 VOLUME 436986.741 3725159.165 209.61

LOCATION L0002293 VOLUME 436978.151 3725159.251 209.96
LOCATION L0002294 VOLUME 436969.562 3725159.338 210.31
LOCATION L0002295 VOLUME 436960.972 3725159.424 210.66
LOCATION L0002296 VOLUME 436952.382 3725159.511 211.01
LOCATION L0002297 VOLUME 436943.793 3725159.597 211.36
LOCATION L0002298 VOLUME 436935.203 3725159.683 211.71
LOCATION L0002299 VOLUME 436926.614 3725159.770 212.06
LOCATION L0002300 VOLUME 436918.024 3725159.856 212.41
LOCATION L0002301 VOLUME 436909.435 3725159.943 212.75
LOCATION L0002302 VOLUME 436900.845 3725160.029 213.10
LOCATION L0002303 VOLUME 436892.255 3725160.116 213.45
LOCATION L0002304 VOLUME 436883.666 3725160.202 213.80
LOCATION L0002305 VOLUME 436875.076 3725160.288 214.15
LOCATION L0002306 VOLUME 436866.487 3725160.375 214.50
LOCATION L0002307 VOLUME 436857.897 3725160.461 214.85
LOCATION L0002308 VOLUME 436849.308 3725160.548 215.20
LOCATION L0002309 VOLUME 436840.718 3725160.634 215.55
LOCATION L0002310 VOLUME 436832.129 3725160.721 215.90
LOCATION L0002311 VOLUME 436823.539 3725160.807 216.25
LOCATION L0002312 VOLUME 436814.949 3725160.893 216.60
LOCATION L0002313 VOLUME 436806.360 3725160.980 216.94
LOCATION L0002314 VOLUME 436797.770 3725161.066 217.29
LOCATION L0002315 VOLUME 436789.181 3725161.153 217.64
LOCATION L0002316 VOLUME 436780.591 3725161.239 217.99
LOCATION L0002317 VOLUME 436772.002 3725161.326 218.34
LOCATION L0002318 VOLUME 436763.412 3725161.412 218.69
LOCATION L0002319 VOLUME 436754.822 3725161.499 219.04
LOCATION L0002320 VOLUME 436746.233 3725161.585 219.39
LOCATION L0002321 VOLUME 436737.643 3725161.671 219.74
LOCATION L0002322 VOLUME 436729.054 3725161.758 220.09
LOCATION L0002323 VOLUME 436720.464 3725161.844 220.44
LOCATION L0002324 VOLUME 436711.875 3725161.931 220.79
LOCATION L0002325 VOLUME 436703.285 3725162.017 221.14
LOCATION L0002326 VOLUME 436694.696 3725162.104 221.48
LOCATION L0002327 VOLUME 436686.106 3725162.190 221.83
LOCATION L0002328 VOLUME 436677.516 3725162.276 222.18
LOCATION L0002329 VOLUME 436668.939 3725162.640 221.50
LOCATION L0002330 VOLUME 436660.376 3725163.322 219.63
LOCATION L0002331 VOLUME 436651.814 3725164.005 217.76
LOCATION L0002332 VOLUME 436643.251 3725164.687 215.89
LOCATION L0002333 VOLUME 436634.688 3725165.370 214.01
LOCATION L0002334 VOLUME 436626.125 3725166.052 212.14
LOCATION L0002335 VOLUME 436617.562 3725166.735 210.27
LOCATION L0002336 VOLUME 436609.226 3725168.705 209.52
LOCATION L0002337 VOLUME 436600.947 3725170.993 209.06
LOCATION L0002338 VOLUME 436592.667 3725173.281 208.59
LOCATION L0002339 VOLUME 436584.387 3725175.569 208.12
LOCATION L0002340 VOLUME 436576.108 3725177.857 207.65
LOCATION L0002341 VOLUME 436567.828 3725180.145 207.18
LOCATION L0002342 VOLUME 436559.548 3725182.432 206.71

```
   LOCATION L0002343     VOLUME   436551.268 3725184.720 206.25
   LOCATION L0002344     VOLUME   436542.989 3725187.008 205.78
   LOCATION L0002345     VOLUME   436534.709 3725189.296 205.31
   LOCATION L0002346     VOLUME   436526.429 3725191.584 204.84
   LOCATION L0002347     VOLUME   436518.316 3725194.344 204.16
   LOCATION L0002348     VOLUME   436510.433 3725197.757 203.17
   LOCATION L0002349     VOLUME   436502.551 3725201.171 202.18
   LOCATION L0002350     VOLUME   436494.668 3725204.585 201.19
   LOCATION L0002351     VOLUME   436486.786 3725207.998 200.20
   LOCATION L0002352     VOLUME   436478.903 3725211.412 199.22
   LOCATION L0002353     VOLUME   436471.021 3725214.826 198.23
   LOCATION L0002354     VOLUME   436463.759 3725219.357 197.51
   LOCATION L0002355     VOLUME   436456.693 3725224.243 196.88
   LOCATION L0002356     VOLUME   436449.628 3725229.129 196.25
   LOCATION L0002357     VOLUME   436442.563 3725234.014 195.62
   LOCATION L0002358     VOLUME   436435.497 3725238.900 194.99
   LOCATION L0002359     VOLUME   436428.432 3725243.785 194.36
   LOCATION L0002360     VOLUME   436421.367 3725248.671 193.73
   LOCATION L0002361     VOLUME   436414.301 3725253.557 193.09
   LOCATION L0002362     VOLUME   436407.236 3725258.442 192.46
   LOCATION L0002363     VOLUME   436400.171 3725263.328 191.83
   LOCATION L0002364     VOLUME   436393.105 3725268.213 191.20
** END OF LINE VOLUME SOURCE ID = SLINE3
** ----------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE6
** DESCRSRC OFF-SITE TRAVEL 55%
** PREFIX
** LENGTH OF SIDE = 8.59
** CONFIGURATION = ADJACENT
** EMISSION RATE = 2.0E-06
** VERTICAL DIMENSION = 6.99
** SZINIT = 3.25
** NODES = 14
** 437583.669, 3725312.727, 208.55, 3.49, 4.00
** 437523.044, 3725239.203, 202.92, 3.49, 4.00
** 437470.158, 3725206.956, 200.00, 3.49, 4.00
** 437400.504, 3725185.027, 201.52, 3.49, 4.00
** 437437.911, 3725112.793, 199.02, 3.49, 4.00
** 437544.972, 3724972.194, 201.95, 3.49, 4.00
** 437633.975, 3724898.670, 200.88, 3.49, 4.00
** 437713.949, 3724841.915, 202.06, 3.49, 4.00
** 437765.545, 3724825.146, 201.23, 3.49, 4.00
** 437827.460, 3724830.305, 202.44, 3.49, 4.00
** 437935.812, 3724869.002, 206.37, 3.49, 4.00
** 437989.987, 3724885.771, 209.38, 3.49, 4.00
** 438027.394, 3724880.611, 214.76, 3.49, 4.00
** 438080.280, 3724870.292, 218.75, 3.49, 4.00
** ----------------------------------------------------------------------
   LOCATION L0002365     VOLUME   437580.937 3725309.414 208.30
```

LOCATION L0002366 VOLUME 437575.472 3725302.786 207.79
LOCATION L0002367 VOLUME 437570.007 3725296.159 207.28
LOCATION L0002368 VOLUME 437564.542 3725289.531 206.77
LOCATION L0002369 VOLUME 437559.078 3725282.904 206.27
LOCATION L0002370 VOLUME 437553.613 3725276.276 205.76
LOCATION L0002371 VOLUME 437548.148 3725269.649 205.25
LOCATION L0002372 VOLUME 437542.683 3725263.021 204.74
LOCATION L0002373 VOLUME 437537.218 3725256.393 204.24
LOCATION L0002374 VOLUME 437531.754 3725249.766 203.73
LOCATION L0002375 VOLUME 437526.289 3725243.138 203.22
LOCATION L0002376 VOLUME 437520.065 3725237.387 202.76
LOCATION L0002377 VOLUME 437512.731 3725232.915 202.35
LOCATION L0002378 VOLUME 437505.396 3725228.443 201.95
LOCATION L0002379 VOLUME 437498.062 3725223.970 201.54
LOCATION L0002380 VOLUME 437490.728 3725219.498 201.14
LOCATION L0002381 VOLUME 437483.394 3725215.026 200.73
LOCATION L0002382 VOLUME 437476.060 3725210.554 200.33
LOCATION L0002383 VOLUME 437468.558 3725206.452 200.03
LOCATION L0002384 VOLUME 437460.365 3725203.873 200.21
LOCATION L0002385 VOLUME 437452.171 3725201.293 200.39
LOCATION L0002386 VOLUME 437443.977 3725198.714 200.57
LOCATION L0002387 VOLUME 437435.784 3725196.134 200.75
LOCATION L0002388 VOLUME 437427.590 3725193.555 200.93
LOCATION L0002389 VOLUME 437419.397 3725190.975 201.11
LOCATION L0002390 VOLUME 437411.203 3725188.396 201.29
LOCATION L0002391 VOLUME 437403.010 3725185.816 201.47
LOCATION L0002392 VOLUME 437403.246 3725179.732 201.34
LOCATION L0002393 VOLUME 437407.196 3725172.105 201.07
LOCATION L0002394 VOLUME 437411.146 3725164.477 200.81
LOCATION L0002395 VOLUME 437415.096 3725156.849 200.54
LOCATION L0002396 VOLUME 437419.046 3725149.221 200.28
LOCATION L0002397 VOLUME 437422.997 3725141.593 200.02
LOCATION L0002398 VOLUME 437426.947 3725133.965 199.75
LOCATION L0002399 VOLUME 437430.897 3725126.337 199.49
LOCATION L0002400 VOLUME 437434.847 3725118.710 199.22
LOCATION L0002401 VOLUME 437439.078 3725111.260 199.05
LOCATION L0002402 VOLUME 437444.282 3725104.426 199.19
LOCATION L0002403 VOLUME 437449.486 3725097.591 199.34
LOCATION L0002404 VOLUME 437454.691 3725090.757 199.48
LOCATION L0002405 VOLUME 437459.895 3725083.923 199.62
LOCATION L0002406 VOLUME 437465.099 3725077.089 199.76
LOCATION L0002407 VOLUME 437470.303 3725070.255 199.91
LOCATION L0002408 VOLUME 437475.507 3725063.420 200.05
LOCATION L0002409 VOLUME 437480.711 3725056.586 200.19
LOCATION L0002410 VOLUME 437485.915 3725049.752 200.33
LOCATION L0002411 VOLUME 437491.119 3725042.918 200.48
LOCATION L0002412 VOLUME 437496.323 3725036.084 200.62
LOCATION L0002413 VOLUME 437501.527 3725029.249 200.76
LOCATION L0002414 VOLUME 437506.731 3725022.415 200.90
LOCATION L0002415 VOLUME 437511.935 3725015.581 201.05

LOCATION L0002416 VOLUME 437517.139 3725008.747 201.19
LOCATION L0002417 VOLUME 437522.343 3725001.913 201.33
LOCATION L0002418 VOLUME 437527.547 3724995.078 201.47
LOCATION L0002419 VOLUME 437532.751 3724988.244 201.62
LOCATION L0002420 VOLUME 437537.955 3724981.410 201.76
LOCATION L0002421 VOLUME 437543.159 3724974.576 201.90
LOCATION L0002422 VOLUME 437549.287 3724968.630 201.90
LOCATION L0002423 VOLUME 437555.910 3724963.159 201.82
LOCATION L0002424 VOLUME 437562.532 3724957.688 201.74
LOCATION L0002425 VOLUME 437569.155 3724952.217 201.66
LOCATION L0002426 VOLUME 437575.777 3724946.747 201.58
LOCATION L0002427 VOLUME 437582.400 3724941.276 201.50
LOCATION L0002428 VOLUME 437589.023 3724935.805 201.42
LOCATION L0002429 VOLUME 437595.645 3724930.334 201.34
LOCATION L0002430 VOLUME 437602.268 3724924.863 201.26
LOCATION L0002431 VOLUME 437608.890 3724919.393 201.18
LOCATION L0002432 VOLUME 437615.513 3724913.922 201.10
LOCATION L0002433 VOLUME 437622.135 3724908.451 201.02
LOCATION L0002434 VOLUME 437628.758 3724902.980 200.94
LOCATION L0002435 VOLUME 437635.462 3724897.615 200.90
LOCATION L0002436 VOLUME 437642.467 3724892.644 201.01
LOCATION L0002437 VOLUME 437649.472 3724887.672 201.11
LOCATION L0002438 VOLUME 437656.477 3724882.701 201.21
LOCATION L0002439 VOLUME 437663.482 3724877.730 201.32
LOCATION L0002440 VOLUME 437670.488 3724872.758 201.42
LOCATION L0002441 VOLUME 437677.493 3724867.787 201.52
LOCATION L0002442 VOLUME 437684.498 3724862.815 201.63
LOCATION L0002443 VOLUME 437691.503 3724857.844 201.73
LOCATION L0002444 VOLUME 437698.508 3724852.872 201.83
LOCATION L0002445 VOLUME 437705.514 3724847.901 201.94
LOCATION L0002446 VOLUME 437712.519 3724842.929 202.04
LOCATION L0002447 VOLUME 437720.451 3724839.802 201.96
LOCATION L0002448 VOLUME 437728.620 3724837.146 201.82
LOCATION L0002449 VOLUME 437736.789 3724834.491 201.69
LOCATION L0002450 VOLUME 437744.959 3724831.836 201.56
LOCATION L0002451 VOLUME 437753.128 3724829.181 201.43
LOCATION L0002452 VOLUME 437761.298 3724826.526 201.30
LOCATION L0002453 VOLUME 437769.655 3724825.488 201.31
LOCATION L0002454 VOLUME 437778.215 3724826.202 201.48
LOCATION L0002455 VOLUME 437786.775 3724826.915 201.64
LOCATION L0002456 VOLUME 437795.336 3724827.628 201.81
LOCATION L0002457 VOLUME 437803.896 3724828.342 201.98
LOCATION L0002458 VOLUME 437812.456 3724829.055 202.15
LOCATION L0002459 VOLUME 437821.017 3724829.768 202.31
LOCATION L0002460 VOLUME 437829.460 3724831.020 202.51
LOCATION L0002461 VOLUME 437837.550 3724833.909 202.81
LOCATION L0002462 VOLUME 437845.640 3724836.798 203.10
LOCATION L0002463 VOLUME 437853.729 3724839.687 203.39
LOCATION L0002464 VOLUME 437861.819 3724842.576 203.69
LOCATION L0002465 VOLUME 437869.908 3724845.466 203.98

```
   LOCATION L0002466     VOLUME   437877.998 3724848.355 204.27
   LOCATION L0002467     VOLUME   437886.087 3724851.244 204.57
   LOCATION L0002468     VOLUME   437894.177 3724854.133 204.86
   LOCATION L0002469     VOLUME   437902.267 3724857.022 205.15
   LOCATION L0002470     VOLUME   437910.356 3724859.911 205.45
   LOCATION L0002471     VOLUME   437918.446 3724862.800 205.74
   LOCATION L0002472     VOLUME   437926.535 3724865.689 206.03
   LOCATION L0002473     VOLUME   437934.625 3724868.579 206.33
   LOCATION L0002474     VOLUME   437942.814 3724871.170 206.76
   LOCATION L0002475     VOLUME   437951.020 3724873.710 207.21
   LOCATION L0002476     VOLUME   437959.225 3724876.250 207.67
   LOCATION L0002477     VOLUME   437967.431 3724878.789 208.13
   LOCATION L0002478     VOLUME   437975.637 3724881.329 208.58
   LOCATION L0002479     VOLUME   437983.843 3724883.869 209.04
   LOCATION L0002480     VOLUME   437992.125 3724885.476 209.69
   LOCATION L0002481     VOLUME   438000.635 3724884.302 210.91
   LOCATION L0002482     VOLUME   438009.144 3724883.129 212.14
   LOCATION L0002483     VOLUME   438017.654 3724881.955 213.36
   LOCATION L0002484     VOLUME   438026.163 3724880.781 214.58
   LOCATION L0002485     VOLUME   438034.605 3724879.204 215.30
   LOCATION L0002486     VOLUME   438043.036 3724877.559 215.94
   LOCATION L0002487     VOLUME   438051.467 3724875.914 216.58
   LOCATION L0002488     VOLUME   438059.898 3724874.269 217.21
   LOCATION L0002489     VOLUME   438068.329 3724872.624 217.85
   LOCATION L0002490     VOLUME   438076.760 3724870.979 218.48
** END OF LINE VOLUME SOURCE ID = SLINE6
** SOURCE PARAMETERS **
** LINE VOLUME SOURCE ID = SLINE1
   SRCPARAM L0002141     0.0000006809      3.49      4.00      3.25
   SRCPARAM L0002142     0.0000006809      3.49      4.00      3.25
   SRCPARAM L0002143     0.0000006809      3.49      4.00      3.25
   SRCPARAM L0002144     0.0000006809      3.49      4.00      3.25
   SRCPARAM L0002145     0.0000006809      3.49      4.00      3.25
   SRCPARAM L0002146     0.0000006809      3.49      4.00      3.25
   SRCPARAM L0002147     0.0000006809      3.49      4.00      3.25
   SRCPARAM L0002148     0.0000006809      3.49      4.00      3.25
   SRCPARAM L0002149     0.0000006809      3.49      4.00      3.25
   SRCPARAM L0002150     0.0000006809      3.49      4.00      3.25
   SRCPARAM L0002151     0.0000006809      3.49      4.00      3.25
   SRCPARAM L0002152     0.0000006809      3.49      4.00      3.25
** ------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE2
   SRCPARAM L0002153     0.00000005934      3.49      4.00      3.25
   SRCPARAM L0002154     0.00000005934      3.49      4.00      3.25
   SRCPARAM L0002155     0.00000005934      3.49      4.00      3.25
   SRCPARAM L0002156     0.00000005934      3.49      4.00      3.25
   SRCPARAM L0002157     0.00000005934      3.49      4.00      3.25
   SRCPARAM L0002158     0.00000005934      3.49      4.00      3.25
   SRCPARAM L0002159     0.00000005934      3.49      4.00      3.25
   SRCPARAM L0002160     0.00000005934      3.49      4.00      3.25
```

```
SRCPARAM L0002161     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002162     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002163     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002164     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002165     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002166     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002167     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002168     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002169     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002170     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002171     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002172     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002173     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002174     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002175     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002176     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002177     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002178     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002179     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002180     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002181     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002182     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002183     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002184     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002185     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002186     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002187     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002188     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002189     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002190     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002191     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002192     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002193     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002194     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002195     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002196     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002197     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002198     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002199     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002200     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002201     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002202     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002203     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002204     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002205     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002206     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002207     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002208     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002209     0.00000005934      3.49      4.00      3.25
SRCPARAM L0002210     0.00000005934      3.49      4.00      3.25
```

```
   SRCPARAM L0002211     0.00000005934      3.49      4.00      3.25
   SRCPARAM L0002212     0.00000005934      3.49      4.00      3.25
   SRCPARAM L0002213     0.00000005934      3.49      4.00      3.25
   SRCPARAM L0002214     0.00000005934      3.49      4.00      3.25
   SRCPARAM L0002215     0.00000005934      3.49      4.00      3.25
   SRCPARAM L0002216     0.00000005934      3.49      4.00      3.25
** ----------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE3
   SRCPARAM L0002217     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002218     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002219     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002220     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002221     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002222     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002223     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002224     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002225     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002226     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002227     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002228     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002229     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002230     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002231     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002232     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002233     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002234     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002235     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002236     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002237     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002238     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002239     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002240     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002241     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002242     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002243     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002244     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002245     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002246     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002247     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002248     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002249     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002250     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002251     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002252     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002253     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002254     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002255     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002256     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002257     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002258     0.00000001297      3.49      4.00      3.25
```

```
SRCPARAM L0002259     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002260     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002261     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002262     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002263     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002264     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002265     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002266     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002267     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002268     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002269     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002270     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002271     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002272     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002273     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002274     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002275     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002276     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002277     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002278     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002279     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002280     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002281     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002282     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002283     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002284     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002285     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002286     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002287     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002288     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002289     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002290     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002291     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002292     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002293     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002294     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002295     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002296     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002297     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002298     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002299     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002300     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002301     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002302     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002303     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002304     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002305     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002306     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002307     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002308     0.00000001297      3.49      4.00      3.25
```

```
SRCPARAM L0002309     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002310     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002311     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002312     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002313     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002314     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002315     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002316     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002317     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002318     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002319     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002320     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002321     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002322     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002323     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002324     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002325     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002326     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002327     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002328     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002329     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002330     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002331     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002332     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002333     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002334     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002335     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002336     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002337     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002338     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002339     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002340     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002341     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002342     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002343     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002344     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002345     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002346     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002347     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002348     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002349     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002350     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002351     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002352     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002353     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002354     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002355     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002356     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002357     0.00000001297      3.49      4.00      3.25
SRCPARAM L0002358     0.00000001297      3.49      4.00      3.25
```

```
   SRCPARAM L0002359     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002360     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002361     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002362     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002363     0.00000001297      3.49      4.00      3.25
   SRCPARAM L0002364     0.00000001297      3.49      4.00      3.25
** ----------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE6
   SRCPARAM L0002365     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002366     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002367     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002368     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002369     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002370     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002371     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002372     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002373     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002374     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002375     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002376     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002377     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002378     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002379     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002380     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002381     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002382     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002383     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002384     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002385     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002386     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002387     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002388     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002389     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002390     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002391     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002392     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002393     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002394     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002395     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002396     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002397     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002398     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002399     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002400     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002401     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002402     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002403     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002404     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002405     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002406     0.00000001587      3.49      4.00      3.25
```

```
SRCPARAM L0002407     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002408     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002409     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002410     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002411     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002412     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002413     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002414     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002415     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002416     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002417     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002418     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002419     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002420     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002421     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002422     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002423     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002424     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002425     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002426     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002427     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002428     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002429     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002430     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002431     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002432     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002433     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002434     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002435     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002436     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002437     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002438     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002439     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002440     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002441     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002442     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002443     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002444     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002445     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002446     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002447     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002448     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002449     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002450     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002451     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002452     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002453     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002454     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002455     0.00000001587      3.49      4.00      3.25
SRCPARAM L0002456     0.00000001587      3.49      4.00      3.25
```

```
   SRCPARAM L0002457     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002458     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002459     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002460     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002461     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002462     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002463     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002464     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002465     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002466     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002467     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002468     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002469     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002470     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002471     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002472     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002473     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002474     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002475     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002476     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002477     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002478     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002479     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002480     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002481     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002482     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002483     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002484     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002485     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002486     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002487     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002488     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002489     0.00000001587      3.49      4.00      3.25
   SRCPARAM L0002490     0.00000001587      3.49      4.00      3.25
** ------------------------------------------------------------------
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD RECEPTOR PATHWAY
**************************************
**
**
RE STARTING
   INCLUDED "14042-04 HRA.ROU"
RE FINISHED
**
**************************************
** AERMOD METEOROLOGY PATHWAY
```

```
**************************************
**
**
ME STARTING
   SURFFILE MSVJ_V9_ADJU\MSVJ_V9.SFC
   PROFFILE MSVJ_V9_ADJU\MSVJ_V9.PFL
   SURFDATA 93184 2011
   UAIRDATA 3190 2011
   SITEDATA 99999 2011
   PROFBASE 170.0 METERS
ME FINISHED
**
**************************************
** AERMOD OUTPUT PATHWAY
**************************************
**
**
OU STARTING
** AUTO-GENERATED PLOTFILES
   PLOTFILE   ANNUAL ALL "14042-04 HRA.AD\AN00GALL.PLT" 31
   SUMMFILE "14042-04 HRA.SUM"
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     860       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     860       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

↟ *** AERMOD - VERSION 21112  ***   *** C:\LAKES\AERMOD VIEW\14042-04 HRA\14042-04
HRA.ISC                    ***        11/15/21
 *** AERMET - VERSION  16216 ***   ***
```

```
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*

                                         ***     MODEL SETUP OPTIONS SUMMARY
  ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses URBAN Dispersion Algorithm for the SBL for   350 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   3010232.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay.
         6. Urban Roughness Length of 1.0 Meter Assumed.

 **Other Options Specified:
         ADJ_U*   - Use ADJ_U* option for SBL in AERMET
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  DPM

 **Model Calculates ANNUAL Averages Only

 **This Run Includes:    350 Source(s);       1 Source Group(s); and      11
Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:    350 VOLUME source(s)
                 and:      0 AREA type source(s)
                 and:      0 LINE source(s)
                 and:      0 RLINE/RLINEXT source(s)
                 and:      0 OPENPIT source(s)
```

and: 0 BUOYANT LINE source(s) with a total of 0 line(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 16216

**Output Options Selected:
Model Outputs Tables of ANNUAL Averages by Receptor
Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 170.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ;
Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 3.7 MB of RAM.

**Input Runstream File: aermod.inp

**Output Print File: aermod.out

**Detailed Error/Message File: 14042-04 HRA.ERR

**File for Summary of Results: 14042-04 HRA.SUM

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

NUMBER EMISSION RATE		BASE	RELEASE	INIT.	INIT.	URBAN	EMISSION RATE

SOURCE ID	PART. SCALAR CATS.	(GRAMS/SEC) VARY BY	X (METERS)	Y (METERS)	ELEV. (METERS)	HEIGHT (METERS)	SY (METERS)	SZ SOURCE (METERS)
L0002141	0	0.68090E-06	437662.2	3725222.2	210.9	3.49	4.00	3.25 YES
L0002142	0	0.68090E-06	437667.9	3725228.6	211.5	3.49	4.00	3.25 YES
L0002143	0	0.68090E-06	437673.6	3725235.0	212.2	3.49	4.00	3.25 YES
L0002144	0	0.68090E-06	437679.4	3725241.5	212.8	3.49	4.00	3.25 YES
L0002145	0	0.68090E-06	437685.1	3725247.9	213.5	3.49	4.00	3.25 YES
L0002146	0	0.68090E-06	437690.8	3725254.3	214.1	3.49	4.00	3.25 YES
L0002147	0	0.68090E-06	437696.5	3725260.7	214.8	3.49	4.00	3.25 YES
L0002148	0	0.68090E-06	437702.2	3725267.1	215.4	3.49	4.00	3.25 YES
L0002149	0	0.68090E-06	437708.0	3725273.5	216.0	3.49	4.00	3.25 YES
L0002150	0	0.68090E-06	437713.7	3725279.9	216.7	3.49	4.00	3.25 YES
L0002151	0	0.68090E-06	437719.4	3725286.3	217.3	3.49	4.00	3.25 YES
L0002152	0	0.68090E-06	437725.1	3725292.7	218.0	3.49	4.00	3.25 YES
L0002153	0	0.59340E-07	437549.6	3725248.3	204.7	3.49	4.00	3.25 YES
L0002154	0	0.59340E-07	437556.0	3725242.6	205.0	3.49	4.00	3.25 YES
L0002155	0	0.59340E-07	437562.4	3725236.8	205.4	3.49	4.00	3.25 YES
L0002156	0	0.59340E-07	437568.8	3725231.1	205.7	3.49	4.00	3.25 YES
L0002157	0	0.59340E-07	437575.2	3725225.4	206.0	3.49	4.00	3.25 YES
L0002158	0	0.59340E-07	437581.6	3725219.7	206.3	3.49	4.00	3.25 YES
L0002159	0	0.59340E-07	437588.0	3725213.9	206.7	3.49	4.00	3.25 YES
L0002160	0	0.59340E-07	437594.4	3725208.2	207.0	3.49	4.00	3.25 YES
L0002161	0	0.59340E-07	437600.8	3725202.5	207.3	3.49	4.00	3.25 YES
L0002162	0	0.59340E-07	437607.2	3725196.8	207.6	3.49	4.00	

```
3.25     YES
 L0002163         0   0.59340E-07  437613.6 3725191.0   207.9     3.49     4.00
3.25     YES
 L0002164         0   0.59340E-07  437620.0 3725185.3   208.3     3.49     4.00
3.25     YES
 L0002165         0   0.59340E-07  437626.4 3725179.6   208.6     3.49     4.00
3.25     YES
 L0002166         0   0.59340E-07  437632.8 3725173.9   208.9     3.49     4.00
3.25     YES
 L0002167         0   0.59340E-07  437639.4 3725177.7   209.4     3.49     4.00
3.25     YES
 L0002168         0   0.59340E-07  437646.0 3725183.2   209.9     3.49     4.00
3.25     YES
 L0002169         0   0.59340E-07  437652.6 3725188.7   210.3     3.49     4.00
3.25     YES
 L0002170         0   0.59340E-07  437659.2 3725194.2   210.8     3.49     4.00
3.25     YES
 L0002171         0   0.59340E-07  437665.8 3725199.7   211.3     3.49     4.00
3.25     YES
 L0002172         0   0.59340E-07  437672.4 3725205.2   211.8     3.49     4.00
3.25     YES
 L0002173         0   0.59340E-07  437679.0 3725210.7   212.3     3.49     4.00
3.25     YES
 L0002174         0   0.59340E-07  437685.6 3725216.2   212.8     3.49     4.00
3.25     YES
 L0002175         0   0.59340E-07  437692.2 3725221.6   213.3     3.49     4.00
3.25     YES
 L0002176         0   0.59340E-07  437698.8 3725227.1   213.8     3.49     4.00
3.25     YES
 L0002177         0   0.59340E-07  437705.4 3725232.6   214.2     3.49     4.00
3.25     YES
 L0002178         0   0.59340E-07  437712.0 3725238.1   214.7     3.49     4.00
3.25     YES
 L0002179         0   0.59340E-07  437718.6 3725243.6   215.2     3.49     4.00
3.25     YES
 L0002180         0   0.59340E-07  437725.2 3725249.1   215.7     3.49     4.00
3.25     YES
 *** AERMOD - VERSION 21112  ***   *** C:\LAKES\AERMOD VIEW\14042-04 HRA\14042-04
HRA.ISC                    ***        11/15/21
 *** AERMET - VERSION  16216 ***   ***
                           ***       12:38:15

                                    PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*


                                                    *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                     BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
```

SOURCE ID	PART. SCALAR CATS.	(GRAMS/SEC) VARY BY	X (METERS)	Y (METERS)	ELEV. (METERS)	HEIGHT (METERS)	SY (METERS)	SZ
L0002181	0	0.59340E-07	437731.8	3725254.6	216.2	3.49	4.00	3.25 YES
L0002182	0	0.59340E-07	437738.4	3725260.1	216.7	3.49	4.00	3.25 YES
L0002183	0	0.59340E-07	437743.1	3725266.6	217.1	3.49	4.00	3.25 YES
L0002184	0	0.59340E-07	437743.9	3725275.2	217.4	3.49	4.00	3.25 YES
L0002185	0	0.59340E-07	437744.7	3725283.7	217.6	3.49	4.00	3.25 YES
L0002186	0	0.59340E-07	437745.5	3725292.3	217.9	3.49	4.00	3.25 YES
L0002187	0	0.59340E-07	437746.2	3725300.8	218.1	3.49	4.00	3.25 YES
L0002188	0	0.59340E-07	437744.6	3725309.3	218.0	3.49	4.00	3.25 YES
L0002189	0	0.59340E-07	437743.1	3725317.7	217.8	3.49	4.00	3.25 YES
L0002190	0	0.59340E-07	437741.5	3725326.2	217.6	3.49	4.00	3.25 YES
L0002191	0	0.59340E-07	437739.9	3725334.6	217.4	3.49	4.00	3.25 YES
L0002192	0	0.59340E-07	437738.3	3725343.0	217.2	3.49	4.00	3.25 YES
L0002193	0	0.59340E-07	437736.8	3725351.5	217.1	3.49	4.00	3.25 YES
L0002194	0	0.59340E-07	437733.8	3725359.4	216.7	3.49	4.00	3.25 YES
L0002195	0	0.59340E-07	437728.9	3725366.4	215.9	3.49	4.00	3.25 YES
L0002196	0	0.59340E-07	437724.0	3725373.4	215.1	3.49	4.00	3.25 YES
L0002197	0	0.59340E-07	437719.1	3725380.5	214.3	3.49	4.00	3.25 YES
L0002198	0	0.59340E-07	437714.1	3725387.5	213.5	3.49	4.00	3.25 YES
L0002199	0	0.59340E-07	437709.2	3725394.6	212.7	3.49	4.00	3.25 YES
L0002200	0	0.59340E-07	437704.3	3725401.6	212.0	3.49	4.00	3.25 YES
L0002201	0	0.59340E-07	437698.2	3725401.6	211.3	3.49	4.00	3.25 YES
L0002202	0	0.59340E-07	437691.2	3725396.6	210.7	3.49	4.00	

```
3.25     YES
 L0002203         0   0.59340E-07  437684.3 3725391.5   210.0     3.49     4.00
3.25     YES
 L0002204         0   0.59340E-07  437677.4 3725386.4   209.4     3.49     4.00
3.25     YES
 L0002205         0   0.59340E-07  437670.4 3725381.4   208.8     3.49     4.00
3.25     YES
 L0002206         0   0.59340E-07  437663.5 3725376.3   208.2     3.49     4.00
3.25     YES
 L0002207         0   0.59340E-07  437656.6 3725371.1   207.7     3.49     4.00
3.25     YES
 L0002208         0   0.59340E-07  437650.7 3725364.9   207.8     3.49     4.00
3.25     YES
 L0002209         0   0.59340E-07  437644.8 3725358.6   208.0     3.49     4.00
3.25     YES
 L0002210         0   0.59340E-07  437638.9 3725352.4   208.1     3.49     4.00
3.25     YES
 L0002211         0   0.59340E-07  437633.0 3725346.2   208.3     3.49     4.00
3.25     YES
 L0002212         0   0.59340E-07  437627.1 3725339.9   208.5     3.49     4.00
3.25     YES
 L0002213         0   0.59340E-07  437621.2 3725333.7   208.6     3.49     4.00
3.25     YES
 L0002214         0   0.59340E-07  437615.3 3725327.4   208.8     3.49     4.00
3.25     YES
 L0002215         0   0.59340E-07  437609.4 3725321.2   208.9     3.49     4.00
3.25     YES
 L0002216         0   0.59340E-07  437603.6 3725314.9   209.1     3.49     4.00
3.25     YES
 L0002217         0   0.12970E-07  437582.4 3725309.3   208.4     3.49     4.00
3.25     YES
 L0002218         0   0.12970E-07  437576.8 3725302.8   207.8     3.49     4.00
3.25     YES
 L0002219         0   0.12970E-07  437571.2 3725296.3   207.3     3.49     4.00
3.25     YES
 L0002220         0   0.12970E-07  437565.6 3725289.8   206.7     3.49     4.00
3.25     YES
```


*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

	NUMBER	EMISSION RATE			BASE	RELEASE	INIT.	INIT.	URBAN	EMISSION RATE

SOURCE ID	PART. SCALAR CATS.	(GRAMS/SEC) VARY BY	X (METERS)	Y (METERS)	ELEV. (METERS)	HEIGHT (METERS)	SY (METERS)	SZ SOURCE
L0002221	0	0.12970E-07	437559.9	3725283.3	206.1	3.49	4.00	3.25 YES
L0002222	0	0.12970E-07	437554.3	3725276.8	205.6	3.49	4.00	3.25 YES
L0002223	0	0.12970E-07	437548.7	3725270.3	205.0	3.49	4.00	3.25 YES
L0002224	0	0.12970E-07	437543.1	3725263.8	204.4	3.49	4.00	3.25 YES
L0002225	0	0.12970E-07	437537.4	3725257.3	203.9	3.49	4.00	3.25 YES
L0002226	0	0.12970E-07	437531.8	3725250.8	203.3	3.49	4.00	3.25 YES
L0002227	0	0.12970E-07	437525.7	3725244.8	202.8	3.49	4.00	3.25 YES
L0002228	0	0.12970E-07	437519.4	3725238.9	202.2	3.49	4.00	3.25 YES
L0002229	0	0.12970E-07	437513.1	3725233.1	201.6	3.49	4.00	3.25 YES
L0002230	0	0.12970E-07	437506.9	3725227.3	201.1	3.49	4.00	3.25 YES
L0002231	0	0.12970E-07	437499.8	3725222.4	200.6	3.49	4.00	3.25 YES
L0002232	0	0.12970E-07	437492.5	3725217.9	200.2	3.49	4.00	3.25 YES
L0002233	0	0.12970E-07	437484.8	3725214.1	200.1	3.49	4.00	3.25 YES
L0002234	0	0.12970E-07	437477.0	3725210.6	200.1	3.49	4.00	3.25 YES
L0002235	0	0.12970E-07	437469.2	3725207.0	200.0	3.49	4.00	3.25 YES
L0002236	0	0.12970E-07	437461.4	3725203.4	200.0	3.49	4.00	3.25 YES
L0002237	0	0.12970E-07	437453.5	3725199.8	199.9	3.49	4.00	3.25 YES
L0002238	0	0.12970E-07	437445.4	3725197.1	200.7	3.49	4.00	3.25 YES
L0002239	0	0.12970E-07	437437.2	3725194.4	201.6	3.49	4.00	3.25 YES
L0002240	0	0.12970E-07	437429.1	3725191.8	202.5	3.49	4.00	3.25 YES
L0002241	0	0.12970E-07	437420.9	3725189.1	203.3	3.49	4.00	3.25 YES
L0002242	0	0.12970E-07	437412.7	3725186.5	204.2	3.49	4.00	

```
3.25     YES
 L0002243         0   0.12970E-07  437404.6 3725183.8   205.1     3.49     4.00
3.25     YES
 L0002244         0   0.12970E-07  437396.4 3725181.2   206.0     3.49     4.00
3.25     YES
 L0002245         0   0.12970E-07  437388.2 3725178.6   206.9     3.49     4.00
3.25     YES
 L0002246         0   0.12970E-07  437379.8 3725176.6   207.7     3.49     4.00
3.25     YES
 L0002247         0   0.12970E-07  437371.5 3725174.5   208.5     3.49     4.00
3.25     YES
 L0002248         0   0.12970E-07  437363.2 3725172.5   209.3     3.49     4.00
3.25     YES
 L0002249         0   0.12970E-07  437354.8 3725170.5   210.1     3.49     4.00
3.25     YES
 L0002250         0   0.12970E-07  437346.5 3725168.5   211.0     3.49     4.00
3.25     YES
 L0002251         0   0.12970E-07  437338.1 3725166.4   211.8     3.49     4.00
3.25     YES
 L0002252         0   0.12970E-07  437329.8 3725164.4   212.6     3.49     4.00
3.25     YES
 L0002253         0   0.12970E-07  437321.4 3725162.4   213.4     3.49     4.00
3.25     YES
 L0002254         0   0.12970E-07  437313.0 3725160.6   214.2     3.49     4.00
3.25     YES
 L0002255         0   0.12970E-07  437304.5 3725160.1   214.6     3.49     4.00
3.25     YES
 L0002256         0   0.12970E-07  437295.9 3725159.7   215.1     3.49     4.00
3.25     YES
 L0002257         0   0.12970E-07  437287.3 3725159.2   215.6     3.49     4.00
3.25     YES
 L0002258         0   0.12970E-07  437278.7 3725158.7   216.0     3.49     4.00
3.25     YES
 L0002259         0   0.12970E-07  437270.1 3725158.3   216.5     3.49     4.00
3.25     YES
 L0002260         0   0.12970E-07  437261.6 3725157.8   216.9     3.49     4.00
3.25     YES
```


 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

```
               NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
```

SOURCE ID	PART. SCALAR CATS.	(GRAMS/SEC) VARY BY	X (METERS)	Y (METERS)	ELEV. (METERS)	HEIGHT (METERS)	SY (METERS)	SZ
L0002261	0	0.12970E-07	437253.0	3725157.3	217.4	3.49	4.00	3.25 YES
L0002262	0	0.12970E-07	437244.4	3725156.9	217.9	3.49	4.00	3.25 YES
L0002263	0	0.12970E-07	437235.8	3725156.6	218.1	3.49	4.00	3.25 YES
L0002264	0	0.12970E-07	437227.2	3725156.7	217.8	3.49	4.00	3.25 YES
L0002265	0	0.12970E-07	437218.7	3725156.7	217.4	3.49	4.00	3.25 YES
L0002266	0	0.12970E-07	437210.1	3725156.8	217.1	3.49	4.00	3.25 YES
L0002267	0	0.12970E-07	437201.5	3725156.9	216.8	3.49	4.00	3.25 YES
L0002268	0	0.12970E-07	437192.9	3725157.0	216.4	3.49	4.00	3.25 YES
L0002269	0	0.12970E-07	437184.3	3725157.1	216.1	3.49	4.00	3.25 YES
L0002270	0	0.12970E-07	437175.7	3725157.2	215.8	3.49	4.00	3.25 YES
L0002271	0	0.12970E-07	437167.1	3725157.3	215.4	3.49	4.00	3.25 YES
L0002272	0	0.12970E-07	437158.5	3725157.4	215.1	3.49	4.00	3.25 YES
L0002273	0	0.12970E-07	437149.9	3725157.5	214.8	3.49	4.00	3.25 YES
L0002274	0	0.12970E-07	437141.4	3725157.6	214.4	3.49	4.00	3.25 YES
L0002275	0	0.12970E-07	437132.8	3725157.6	214.1	3.49	4.00	3.25 YES
L0002276	0	0.12970E-07	437124.2	3725157.7	213.8	3.49	4.00	3.25 YES
L0002277	0	0.12970E-07	437115.6	3725157.8	213.4	3.49	4.00	3.25 YES
L0002278	0	0.12970E-07	437107.0	3725157.9	213.1	3.49	4.00	3.25 YES
L0002279	0	0.12970E-07	437098.4	3725158.0	212.8	3.49	4.00	3.25 YES
L0002280	0	0.12970E-07	437089.8	3725158.1	212.4	3.49	4.00	3.25 YES
L0002281	0	0.12970E-07	437081.2	3725158.2	212.1	3.49	4.00	3.25 YES
L0002282	0	0.12970E-07	437072.6	3725158.3	211.8	3.49	4.00	

```
3.25     YES
 L0002283         0   0.12970E-07  437064.0 3725158.4   211.4     3.49     4.00
3.25     YES
 L0002284         0   0.12970E-07  437055.5 3725158.5   211.1     3.49     4.00
3.25     YES
 L0002285         0   0.12970E-07  437046.9 3725158.5   210.8     3.49     4.00
3.25     YES
 L0002286         0   0.12970E-07  437038.3 3725158.6   210.4     3.49     4.00
3.25     YES
 L0002287         0   0.12970E-07  437029.7 3725158.7   210.1     3.49     4.00
3.25     YES
 L0002288         0   0.12970E-07  437021.1 3725158.8   209.8     3.49     4.00
3.25     YES
 L0002289         0   0.12970E-07  437012.5 3725158.9   209.4     3.49     4.00
3.25     YES
 L0002290         0   0.12970E-07  437003.9 3725159.0   209.1     3.49     4.00
3.25     YES
 L0002291         0   0.12970E-07  436995.3 3725159.1   209.3     3.49     4.00
3.25     YES
 L0002292         0   0.12970E-07  436986.7 3725159.2   209.6     3.49     4.00
3.25     YES
 L0002293         0   0.12970E-07  436978.2 3725159.3   210.0     3.49     4.00
3.25     YES
 L0002294         0   0.12970E-07  436969.6 3725159.3   210.3     3.49     4.00
3.25     YES
 L0002295         0   0.12970E-07  436961.0 3725159.4   210.7     3.49     4.00
3.25     YES
 L0002296         0   0.12970E-07  436952.4 3725159.5   211.0     3.49     4.00
3.25     YES
 L0002297         0   0.12970E-07  436943.8 3725159.6   211.4     3.49     4.00
3.25     YES
 L0002298         0   0.12970E-07  436935.2 3725159.7   211.7     3.49     4.00
3.25     YES
 L0002299         0   0.12970E-07  436926.6 3725159.8   212.1     3.49     4.00
3.25     YES
 L0002300         0   0.12970E-07  436918.0 3725159.9   212.4     3.49     4.00
3.25     YES
```


*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

	NUMBER	EMISSION RATE			BASE	RELEASE	INIT.	INIT.	URBAN	EMISSION RATE

SOURCE ID	PART. SCALAR CATS.	(GRAMS/SEC) VARY BY	X (METERS)	Y (METERS)	ELEV. (METERS)	HEIGHT (METERS)	SY (METERS)	SZ SOURCE (METERS)
L0002301	0	0.12970E-07	436909.4	3725159.9	212.8	3.49	4.00	3.25 YES
L0002302	0	0.12970E-07	436900.8	3725160.0	213.1	3.49	4.00	3.25 YES
L0002303	0	0.12970E-07	436892.3	3725160.1	213.5	3.49	4.00	3.25 YES
L0002304	0	0.12970E-07	436883.7	3725160.2	213.8	3.49	4.00	3.25 YES
L0002305	0	0.12970E-07	436875.1	3725160.3	214.2	3.49	4.00	3.25 YES
L0002306	0	0.12970E-07	436866.5	3725160.4	214.5	3.49	4.00	3.25 YES
L0002307	0	0.12970E-07	436857.9	3725160.5	214.9	3.49	4.00	3.25 YES
L0002308	0	0.12970E-07	436849.3	3725160.5	215.2	3.49	4.00	3.25 YES
L0002309	0	0.12970E-07	436840.7	3725160.6	215.6	3.49	4.00	3.25 YES
L0002310	0	0.12970E-07	436832.1	3725160.7	215.9	3.49	4.00	3.25 YES
L0002311	0	0.12970E-07	436823.5	3725160.8	216.2	3.49	4.00	3.25 YES
L0002312	0	0.12970E-07	436814.9	3725160.9	216.6	3.49	4.00	3.25 YES
L0002313	0	0.12970E-07	436806.4	3725161.0	216.9	3.49	4.00	3.25 YES
L0002314	0	0.12970E-07	436797.8	3725161.1	217.3	3.49	4.00	3.25 YES
L0002315	0	0.12970E-07	436789.2	3725161.2	217.6	3.49	4.00	3.25 YES
L0002316	0	0.12970E-07	436780.6	3725161.2	218.0	3.49	4.00	3.25 YES
L0002317	0	0.12970E-07	436772.0	3725161.3	218.3	3.49	4.00	3.25 YES
L0002318	0	0.12970E-07	436763.4	3725161.4	218.7	3.49	4.00	3.25 YES
L0002319	0	0.12970E-07	436754.8	3725161.5	219.0	3.49	4.00	3.25 YES
L0002320	0	0.12970E-07	436746.2	3725161.6	219.4	3.49	4.00	3.25 YES
L0002321	0	0.12970E-07	436737.6	3725161.7	219.7	3.49	4.00	3.25 YES
L0002322	0	0.12970E-07	436729.1	3725161.8	220.1	3.49	4.00	

```
3.25     YES
 L0002323         0   0.12970E-07  436720.5 3725161.8   220.4     3.49     4.00
3.25     YES
 L0002324         0   0.12970E-07  436711.9 3725161.9   220.8     3.49     4.00
3.25     YES
 L0002325         0   0.12970E-07  436703.3 3725162.0   221.1     3.49     4.00
3.25     YES
 L0002326         0   0.12970E-07  436694.7 3725162.1   221.5     3.49     4.00
3.25     YES
 L0002327         0   0.12970E-07  436686.1 3725162.2   221.8     3.49     4.00
3.25     YES
 L0002328         0   0.12970E-07  436677.5 3725162.3   222.2     3.49     4.00
3.25     YES
 L0002329         0   0.12970E-07  436668.9 3725162.6   221.5     3.49     4.00
3.25     YES
 L0002330         0   0.12970E-07  436660.4 3725163.3   219.6     3.49     4.00
3.25     YES
 L0002331         0   0.12970E-07  436651.8 3725164.0   217.8     3.49     4.00
3.25     YES
 L0002332         0   0.12970E-07  436643.3 3725164.7   215.9     3.49     4.00
3.25     YES
 L0002333         0   0.12970E-07  436634.7 3725165.4   214.0     3.49     4.00
3.25     YES
 L0002334         0   0.12970E-07  436626.1 3725166.1   212.1     3.49     4.00
3.25     YES
 L0002335         0   0.12970E-07  436617.6 3725166.7   210.3     3.49     4.00
3.25     YES
 L0002336         0   0.12970E-07  436609.2 3725168.7   209.5     3.49     4.00
3.25     YES
 L0002337         0   0.12970E-07  436600.9 3725171.0   209.1     3.49     4.00
3.25     YES
 L0002338         0   0.12970E-07  436592.7 3725173.3   208.6     3.49     4.00
3.25     YES
 L0002339         0   0.12970E-07  436584.4 3725175.6   208.1     3.49     4.00
3.25     YES
 L0002340         0   0.12970E-07  436576.1 3725177.9   207.7     3.49     4.00
3.25     YES
```


*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

```
               NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
```

SOURCE ID	PART. SCALAR CATS.	(GRAMS/SEC) VARY BY	X (METERS)	Y (METERS)	ELEV. (METERS)	HEIGHT (METERS)	SY (METERS)	SZ SOURCE
L0002341	0	0.12970E-07	436567.8	3725180.1	207.2	3.49	4.00	3.25 YES
L0002342	0	0.12970E-07	436559.5	3725182.4	206.7	3.49	4.00	3.25 YES
L0002343	0	0.12970E-07	436551.3	3725184.7	206.2	3.49	4.00	3.25 YES
L0002344	0	0.12970E-07	436543.0	3725187.0	205.8	3.49	4.00	3.25 YES
L0002345	0	0.12970E-07	436534.7	3725189.3	205.3	3.49	4.00	3.25 YES
L0002346	0	0.12970E-07	436526.4	3725191.6	204.8	3.49	4.00	3.25 YES
L0002347	0	0.12970E-07	436518.3	3725194.3	204.2	3.49	4.00	3.25 YES
L0002348	0	0.12970E-07	436510.4	3725197.8	203.2	3.49	4.00	3.25 YES
L0002349	0	0.12970E-07	436502.6	3725201.2	202.2	3.49	4.00	3.25 YES
L0002350	0	0.12970E-07	436494.7	3725204.6	201.2	3.49	4.00	3.25 YES
L0002351	0	0.12970E-07	436486.8	3725208.0	200.2	3.49	4.00	3.25 YES
L0002352	0	0.12970E-07	436478.9	3725211.4	199.2	3.49	4.00	3.25 YES
L0002353	0	0.12970E-07	436471.0	3725214.8	198.2	3.49	4.00	3.25 YES
L0002354	0	0.12970E-07	436463.8	3725219.4	197.5	3.49	4.00	3.25 YES
L0002355	0	0.12970E-07	436456.7	3725224.2	196.9	3.49	4.00	3.25 YES
L0002356	0	0.12970E-07	436449.6	3725229.1	196.2	3.49	4.00	3.25 YES
L0002357	0	0.12970E-07	436442.6	3725234.0	195.6	3.49	4.00	3.25 YES
L0002358	0	0.12970E-07	436435.5	3725238.9	195.0	3.49	4.00	3.25 YES
L0002359	0	0.12970E-07	436428.4	3725243.8	194.4	3.49	4.00	3.25 YES
L0002360	0	0.12970E-07	436421.4	3725248.7	193.7	3.49	4.00	3.25 YES
L0002361	0	0.12970E-07	436414.3	3725253.6	193.1	3.49	4.00	3.25 YES
L0002362	0	0.12970E-07	436407.2	3725258.4	192.5	3.49	4.00	

```
3.25     YES
 L0002363         0   0.12970E-07  436400.2 3725263.3   191.8     3.49     4.00
3.25     YES
 L0002364         0   0.12970E-07  436393.1 3725268.2   191.2     3.49     4.00
3.25     YES
 L0002365         0   0.15870E-07  437580.9 3725309.4   208.3     3.49     4.00
3.25     YES
 L0002366         0   0.15870E-07  437575.5 3725302.8   207.8     3.49     4.00
3.25     YES
 L0002367         0   0.15870E-07  437570.0 3725296.2   207.3     3.49     4.00
3.25     YES
 L0002368         0   0.15870E-07  437564.5 3725289.5   206.8     3.49     4.00
3.25     YES
 L0002369         0   0.15870E-07  437559.1 3725282.9   206.3     3.49     4.00
3.25     YES
 L0002370         0   0.15870E-07  437553.6 3725276.3   205.8     3.49     4.00
3.25     YES
 L0002371         0   0.15870E-07  437548.1 3725269.6   205.2     3.49     4.00
3.25     YES
 L0002372         0   0.15870E-07  437542.7 3725263.0   204.7     3.49     4.00
3.25     YES
 L0002373         0   0.15870E-07  437537.2 3725256.4   204.2     3.49     4.00
3.25     YES
 L0002374         0   0.15870E-07  437531.8 3725249.8   203.7     3.49     4.00
3.25     YES
 L0002375         0   0.15870E-07  437526.3 3725243.1   203.2     3.49     4.00
3.25     YES
 L0002376         0   0.15870E-07  437520.1 3725237.4   202.8     3.49     4.00
3.25     YES
 L0002377         0   0.15870E-07  437512.7 3725232.9   202.4     3.49     4.00
3.25     YES
 L0002378         0   0.15870E-07  437505.4 3725228.4   202.0     3.49     4.00
3.25     YES
 L0002379         0   0.15870E-07  437498.1 3725224.0   201.5     3.49     4.00
3.25     YES
 L0002380         0   0.15870E-07  437490.7 3725219.5   201.1     3.49     4.00
3.25     YES
↟ *** AERMOD - VERSION 21112  ***   *** C:\LAKES\AERMOD VIEW\14042-04 HRA\14042-04
HRA.ISC                    ***        11/15/21
 *** AERMET - VERSION  16216 ***   ***
                           ***       12:38:15

                                    PAGE   8
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*


                                                    *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                     BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
```

SOURCE ID	PART. SCALAR CATS.	(GRAMS/SEC) VARY BY	X (METERS)	Y (METERS)	ELEV. (METERS)	HEIGHT (METERS)	SY (METERS)	SZ SOURCE
L0002381	0	0.15870E-07	437483.4	3725215.0	200.7	3.49	4.00	3.25 YES
L0002382	0	0.15870E-07	437476.1	3725210.6	200.3	3.49	4.00	3.25 YES
L0002383	0	0.15870E-07	437468.6	3725206.5	200.0	3.49	4.00	3.25 YES
L0002384	0	0.15870E-07	437460.4	3725203.9	200.2	3.49	4.00	3.25 YES
L0002385	0	0.15870E-07	437452.2	3725201.3	200.4	3.49	4.00	3.25 YES
L0002386	0	0.15870E-07	437444.0	3725198.7	200.6	3.49	4.00	3.25 YES
L0002387	0	0.15870E-07	437435.8	3725196.1	200.8	3.49	4.00	3.25 YES
L0002388	0	0.15870E-07	437427.6	3725193.6	200.9	3.49	4.00	3.25 YES
L0002389	0	0.15870E-07	437419.4	3725191.0	201.1	3.49	4.00	3.25 YES
L0002390	0	0.15870E-07	437411.2	3725188.4	201.3	3.49	4.00	3.25 YES
L0002391	0	0.15870E-07	437403.0	3725185.8	201.5	3.49	4.00	3.25 YES
L0002392	0	0.15870E-07	437403.2	3725179.7	201.3	3.49	4.00	3.25 YES
L0002393	0	0.15870E-07	437407.2	3725172.1	201.1	3.49	4.00	3.25 YES
L0002394	0	0.15870E-07	437411.1	3725164.5	200.8	3.49	4.00	3.25 YES
L0002395	0	0.15870E-07	437415.1	3725156.8	200.5	3.49	4.00	3.25 YES
L0002396	0	0.15870E-07	437419.0	3725149.2	200.3	3.49	4.00	3.25 YES
L0002397	0	0.15870E-07	437423.0	3725141.6	200.0	3.49	4.00	3.25 YES
L0002398	0	0.15870E-07	437426.9	3725134.0	199.8	3.49	4.00	3.25 YES
L0002399	0	0.15870E-07	437430.9	3725126.3	199.5	3.49	4.00	3.25 YES
L0002400	0	0.15870E-07	437434.8	3725118.7	199.2	3.49	4.00	3.25 YES
L0002401	0	0.15870E-07	437439.1	3725111.3	199.1	3.49	4.00	3.25 YES
L0002402	0	0.15870E-07	437444.3	3725104.4	199.2	3.49	4.00	

```
3.25     YES
 L0002403         0   0.15870E-07  437449.5 3725097.6   199.3     3.49     4.00
3.25     YES
 L0002404         0   0.15870E-07  437454.7 3725090.8   199.5     3.49     4.00
3.25     YES
 L0002405         0   0.15870E-07  437459.9 3725083.9   199.6     3.49     4.00
3.25     YES
 L0002406         0   0.15870E-07  437465.1 3725077.1   199.8     3.49     4.00
3.25     YES
 L0002407         0   0.15870E-07  437470.3 3725070.3   199.9     3.49     4.00
3.25     YES
 L0002408         0   0.15870E-07  437475.5 3725063.4   200.1     3.49     4.00
3.25     YES
 L0002409         0   0.15870E-07  437480.7 3725056.6   200.2     3.49     4.00
3.25     YES
 L0002410         0   0.15870E-07  437485.9 3725049.8   200.3     3.49     4.00
3.25     YES
 L0002411         0   0.15870E-07  437491.1 3725042.9   200.5     3.49     4.00
3.25     YES
 L0002412         0   0.15870E-07  437496.3 3725036.1   200.6     3.49     4.00
3.25     YES
 L0002413         0   0.15870E-07  437501.5 3725029.2   200.8     3.49     4.00
3.25     YES
 L0002414         0   0.15870E-07  437506.7 3725022.4   200.9     3.49     4.00
3.25     YES
 L0002415         0   0.15870E-07  437511.9 3725015.6   201.1     3.49     4.00
3.25     YES
 L0002416         0   0.15870E-07  437517.1 3725008.7   201.2     3.49     4.00
3.25     YES
 L0002417         0   0.15870E-07  437522.3 3725001.9   201.3     3.49     4.00
3.25     YES
 L0002418         0   0.15870E-07  437527.5 3724995.1   201.5     3.49     4.00
3.25     YES
 L0002419         0   0.15870E-07  437532.8 3724988.2   201.6     3.49     4.00
3.25     YES
 L0002420         0   0.15870E-07  437538.0 3724981.4   201.8     3.49     4.00
3.25     YES
```


*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

	NUMBER	EMISSION RATE			BASE	RELEASE	INIT.	INIT.	URBAN	EMISSION RATE

SOURCE ID	PART. SCALAR CATS.	(GRAMS/SEC) VARY BY	X (METERS)	Y (METERS)	ELEV. (METERS)	HEIGHT (METERS)	SY (METERS)	SZ SOURCE
L0002421	0	0.15870E-07	437543.2	3724974.6	201.9	3.49	4.00	3.25 YES
L0002422	0	0.15870E-07	437549.3	3724968.6	201.9	3.49	4.00	3.25 YES
L0002423	0	0.15870E-07	437555.9	3724963.2	201.8	3.49	4.00	3.25 YES
L0002424	0	0.15870E-07	437562.5	3724957.7	201.7	3.49	4.00	3.25 YES
L0002425	0	0.15870E-07	437569.2	3724952.2	201.7	3.49	4.00	3.25 YES
L0002426	0	0.15870E-07	437575.8	3724946.7	201.6	3.49	4.00	3.25 YES
L0002427	0	0.15870E-07	437582.4	3724941.3	201.5	3.49	4.00	3.25 YES
L0002428	0	0.15870E-07	437589.0	3724935.8	201.4	3.49	4.00	3.25 YES
L0002429	0	0.15870E-07	437595.6	3724930.3	201.3	3.49	4.00	3.25 YES
L0002430	0	0.15870E-07	437602.3	3724924.9	201.3	3.49	4.00	3.25 YES
L0002431	0	0.15870E-07	437608.9	3724919.4	201.2	3.49	4.00	3.25 YES
L0002432	0	0.15870E-07	437615.5	3724913.9	201.1	3.49	4.00	3.25 YES
L0002433	0	0.15870E-07	437622.1	3724908.5	201.0	3.49	4.00	3.25 YES
L0002434	0	0.15870E-07	437628.8	3724903.0	200.9	3.49	4.00	3.25 YES
L0002435	0	0.15870E-07	437635.5	3724897.6	200.9	3.49	4.00	3.25 YES
L0002436	0	0.15870E-07	437642.5	3724892.6	201.0	3.49	4.00	3.25 YES
L0002437	0	0.15870E-07	437649.5	3724887.7	201.1	3.49	4.00	3.25 YES
L0002438	0	0.15870E-07	437656.5	3724882.7	201.2	3.49	4.00	3.25 YES
L0002439	0	0.15870E-07	437663.5	3724877.7	201.3	3.49	4.00	3.25 YES
L0002440	0	0.15870E-07	437670.5	3724872.8	201.4	3.49	4.00	3.25 YES
L0002441	0	0.15870E-07	437677.5	3724867.8	201.5	3.49	4.00	3.25 YES
L0002442	0	0.15870E-07	437684.5	3724862.8	201.6	3.49	4.00	

```
3.25     YES
 L0002443         0   0.15870E-07  437691.5 3724857.8   201.7     3.49     4.00
3.25     YES
 L0002444         0   0.15870E-07  437698.5 3724852.9   201.8     3.49     4.00
3.25     YES
 L0002445         0   0.15870E-07  437705.5 3724847.9   201.9     3.49     4.00
3.25     YES
 L0002446         0   0.15870E-07  437712.5 3724842.9   202.0     3.49     4.00
3.25     YES
 L0002447         0   0.15870E-07  437720.5 3724839.8   202.0     3.49     4.00
3.25     YES
 L0002448         0   0.15870E-07  437728.6 3724837.1   201.8     3.49     4.00
3.25     YES
 L0002449         0   0.15870E-07  437736.8 3724834.5   201.7     3.49     4.00
3.25     YES
 L0002450         0   0.15870E-07  437745.0 3724831.8   201.6     3.49     4.00
3.25     YES
 L0002451         0   0.15870E-07  437753.1 3724829.2   201.4     3.49     4.00
3.25     YES
 L0002452         0   0.15870E-07  437761.3 3724826.5   201.3     3.49     4.00
3.25     YES
 L0002453         0   0.15870E-07  437769.7 3724825.5   201.3     3.49     4.00
3.25     YES
 L0002454         0   0.15870E-07  437778.2 3724826.2   201.5     3.49     4.00
3.25     YES
 L0002455         0   0.15870E-07  437786.8 3724826.9   201.6     3.49     4.00
3.25     YES
 L0002456         0   0.15870E-07  437795.3 3724827.6   201.8     3.49     4.00
3.25     YES
 L0002457         0   0.15870E-07  437803.9 3724828.3   202.0     3.49     4.00
3.25     YES
 L0002458         0   0.15870E-07  437812.5 3724829.1   202.2     3.49     4.00
3.25     YES
 L0002459         0   0.15870E-07  437821.0 3724829.8   202.3     3.49     4.00
3.25     YES
 L0002460         0   0.15870E-07  437829.5 3724831.0   202.5     3.49     4.00
3.25     YES
 *** AERMOD - VERSION 21112  ***   *** C:\LAKES\AERMOD VIEW\14042-04 HRA\14042-04
HRA.ISC                    ***        11/15/21
 *** AERMET - VERSION  16216 ***   ***
                           ***       12:38:15

                                    PAGE  10
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*


                                                    *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                     BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
```

SOURCE ID	PART. SCALAR CATS.	(GRAMS/SEC) VARY BY	X (METERS)	Y (METERS)	ELEV. (METERS)	HEIGHT (METERS)	SY (METERS)	SZ SOURCE
L0002461	0	0.15870E-07	437837.5	3724833.9	202.8	3.49	4.00	3.25 YES
L0002462	0	0.15870E-07	437845.6	3724836.8	203.1	3.49	4.00	3.25 YES
L0002463	0	0.15870E-07	437853.7	3724839.7	203.4	3.49	4.00	3.25 YES
L0002464	0	0.15870E-07	437861.8	3724842.6	203.7	3.49	4.00	3.25 YES
L0002465	0	0.15870E-07	437869.9	3724845.5	204.0	3.49	4.00	3.25 YES
L0002466	0	0.15870E-07	437878.0	3724848.4	204.3	3.49	4.00	3.25 YES
L0002467	0	0.15870E-07	437886.1	3724851.2	204.6	3.49	4.00	3.25 YES
L0002468	0	0.15870E-07	437894.2	3724854.1	204.9	3.49	4.00	3.25 YES
L0002469	0	0.15870E-07	437902.3	3724857.0	205.2	3.49	4.00	3.25 YES
L0002470	0	0.15870E-07	437910.4	3724859.9	205.5	3.49	4.00	3.25 YES
L0002471	0	0.15870E-07	437918.4	3724862.8	205.7	3.49	4.00	3.25 YES
L0002472	0	0.15870E-07	437926.5	3724865.7	206.0	3.49	4.00	3.25 YES
L0002473	0	0.15870E-07	437934.6	3724868.6	206.3	3.49	4.00	3.25 YES
L0002474	0	0.15870E-07	437942.8	3724871.2	206.8	3.49	4.00	3.25 YES
L0002475	0	0.15870E-07	437951.0	3724873.7	207.2	3.49	4.00	3.25 YES
L0002476	0	0.15870E-07	437959.2	3724876.2	207.7	3.49	4.00	3.25 YES
L0002477	0	0.15870E-07	437967.4	3724878.8	208.1	3.49	4.00	3.25 YES
L0002478	0	0.15870E-07	437975.6	3724881.3	208.6	3.49	4.00	3.25 YES
L0002479	0	0.15870E-07	437983.8	3724883.9	209.0	3.49	4.00	3.25 YES
L0002480	0	0.15870E-07	437992.1	3724885.5	209.7	3.49	4.00	3.25 YES
L0002481	0	0.15870E-07	438000.6	3724884.3	210.9	3.49	4.00	3.25 YES
L0002482	0	0.15870E-07	438009.1	3724883.1	212.1	3.49	4.00	

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

                                          *** SOURCE IDs DEFINING SOURCE GROUPS
***

 SRCGROUP ID   SOURCE IDs
 -----------   ----------

  ALL   L0002141   , L0002142   , L0002143   , L0002144   , L0002145   ,
L0002146   , L0002147   , L0002148   ,

             L0002149   , L0002150   , L0002151   , L0002152   , L0002153   ,
L0002154   , L0002155   , L0002156   ,

             L0002157   , L0002158   , L0002159   , L0002160   , L0002161   ,
L0002162   , L0002163   , L0002164   ,

             L0002165   , L0002166   , L0002167   , L0002168   , L0002169   ,
L0002170   , L0002171   , L0002172   ,

             L0002173   , L0002174   , L0002175   , L0002176   , L0002177   ,
L0002178   , L0002179   , L0002180   ,

             L0002181   , L0002182   , L0002183   , L0002184   , L0002185   ,
L0002186   , L0002187   , L0002188   ,

```
             L0002189    , L0002190    , L0002191    , L0002192    , L0002193    ,
L0002194    , L0002195    , L0002196    ,

             L0002197    , L0002198    , L0002199    , L0002200    , L0002201    ,
L0002202    , L0002203    , L0002204    ,

             L0002205    , L0002206    , L0002207    , L0002208    , L0002209    ,
L0002210    , L0002211    , L0002212    ,

             L0002213    , L0002214    , L0002215    , L0002216    , L0002217    ,
L0002218    , L0002219    , L0002220    ,

             L0002221    , L0002222    , L0002223    , L0002224    , L0002225    ,
L0002226    , L0002227    , L0002228    ,

             L0002229    , L0002230    , L0002231    , L0002232    , L0002233    ,
L0002234    , L0002235    , L0002236    ,

             L0002237    , L0002238    , L0002239    , L0002240    , L0002241    ,
L0002242    , L0002243    , L0002244    ,

             L0002245    , L0002246    , L0002247    , L0002248    , L0002249    ,
L0002250    , L0002251    , L0002252    ,

             L0002253    , L0002254    , L0002255    , L0002256    , L0002257    ,
L0002258    , L0002259    , L0002260    ,

             L0002261    , L0002262    , L0002263    , L0002264    , L0002265    ,
L0002266    , L0002267    , L0002268    ,

             L0002269    , L0002270    , L0002271    , L0002272    , L0002273    ,
L0002274    , L0002275    , L0002276    ,

             L0002277    , L0002278    , L0002279    , L0002280    , L0002281    ,
L0002282    , L0002283    , L0002284    ,

             L0002285    , L0002286    , L0002287    , L0002288    , L0002289    ,
L0002290    , L0002291    , L0002292    ,

             L0002293    , L0002294    , L0002295    , L0002296    , L0002297    ,
L0002298    , L0002299    , L0002300    ,
↟ *** AERMOD - VERSION 21112  ***   *** C:\LAKES\AERMOD VIEW\14042-04 HRA\14042-04
HRA.ISC                   ***        11/15/21
 *** AERMET - VERSION  16216 ***   ***
                          ***        12:38:15

                                     PAGE  12
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*
```

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
	L0002301 , L0002302 , L0002303 , L0002304 , L0002305 , L0002306 , L0002307 , L0002308 ,
	L0002309 , L0002310 , L0002311 , L0002312 , L0002313 , L0002314 , L0002315 , L0002316 ,
	L0002317 , L0002318 , L0002319 , L0002320 , L0002321 , L0002322 , L0002323 , L0002324 ,
	L0002325 , L0002326 , L0002327 , L0002328 , L0002329 , L0002330 , L0002331 , L0002332 ,
	L0002333 , L0002334 , L0002335 , L0002336 , L0002337 , L0002338 , L0002339 , L0002340 ,
	L0002341 , L0002342 , L0002343 , L0002344 , L0002345 , L0002346 , L0002347 , L0002348 ,
	L0002349 , L0002350 , L0002351 , L0002352 , L0002353 , L0002354 , L0002355 , L0002356 ,
	L0002357 , L0002358 , L0002359 , L0002360 , L0002361 , L0002362 , L0002363 , L0002364 ,
	L0002365 , L0002366 , L0002367 , L0002368 , L0002369 , L0002370 , L0002371 , L0002372 ,
	L0002373 , L0002374 , L0002375 , L0002376 , L0002377 , L0002378 , L0002379 , L0002380 ,
	L0002381 , L0002382 , L0002383 , L0002384 , L0002385 , L0002386 , L0002387 , L0002388 ,
	L0002389 , L0002390 , L0002391 , L0002392 , L0002393 , L0002394 , L0002395 , L0002396 ,
	L0002397 , L0002398 , L0002399 , L0002400 , L0002401 , L0002402 , L0002403 , L0002404 ,
	L0002405 , L0002406 , L0002407 , L0002408 , L0002409 , L0002410 , L0002411 , L0002412 ,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS
***

SRCGROUP ID	SOURCE IDs

L0002461 , L0002462 , L0002463 , L0002464 , L0002465 ,
L0002466 , L0002467 , L0002468 ,

L0002469 , L0002470 , L0002471 , L0002472 , L0002473 ,
L0002474 , L0002475 , L0002476 ,

L0002477 , L0002478 , L0002479 , L0002480 , L0002481 ,
L0002482 , L0002483 , L0002484 ,

L0002485 , L0002486 , L0002487 , L0002488 , L0002489 ,
L0002490 ,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** SOURCE IDs DEFINED AS URBAN SOURCES ***

URBAN ID	URBAN POP	SOURCE IDs
	3010232.	L0002141 , L0002142 , L0002143 , L0002144 , L0002145 , L0002146 , L0002147 , L0002148 ,
		L0002149 , L0002150 , L0002151 , L0002152 , L0002153 , L0002154 , L0002155 , L0002156 ,
		L0002157 , L0002158 , L0002159 , L0002160 , L0002161 , L0002162 , L0002163 , L0002164 ,
		L0002165 , L0002166 , L0002167 , L0002168 , L0002169 , L0002170 , L0002171 , L0002172 ,
		L0002173 , L0002174 , L0002175 , L0002176 , L0002177 , L0002178 , L0002179 , L0002180 ,
		L0002181 , L0002182 , L0002183 , L0002184 , L0002185 , L0002186 , L0002187 , L0002188 ,
		L0002189 , L0002190 , L0002191 , L0002192 , L0002193 , L0002194 , L0002195 , L0002196 ,
		L0002197 , L0002198 , L0002199 , L0002200 , L0002201 , L0002202 , L0002203 , L0002204 ,
		L0002205 , L0002206 , L0002207 , L0002208 , L0002209 , L0002210 , L0002211 , L0002212 ,
		L0002213 , L0002214 , L0002215 , L0002216 , L0002217 , L0002218 , L0002219 , L0002220 ,
		L0002221 , L0002222 , L0002223 , L0002224 , L0002225 , L0002226 , L0002227 , L0002228 ,
		L0002229 , L0002230 , L0002231 , L0002232 , L0002233 , L0002234 , L0002235 , L0002236 ,
		L0002237 , L0002238 , L0002239 , L0002240 , L0002241 , L0002242 , L0002243 , L0002244 ,

*** SOURCE IDs DEFINED AS URBAN SOURCES
***

URBAN ID	URBAN POP	SOURCE IDs

L0002301 , L0002302 , L0002303 , L0002304 , L0002305 ,
L0002306 , L0002307 , L0002308 ,

L0002309 , L0002310 , L0002311 , L0002312 , L0002313 ,
L0002314 , L0002315 , L0002316 ,

L0002317 , L0002318 , L0002319 , L0002320 , L0002321 ,
L0002322 , L0002323 , L0002324 ,

L0002325 , L0002326 , L0002327 , L0002328 , L0002329 ,
L0002330 , L0002331 , L0002332 ,

L0002333 , L0002334 , L0002335 , L0002336 , L0002337 ,
L0002338 , L0002339 , L0002340 ,

```
             L0002341    , L0002342    , L0002343    , L0002344    , L0002345    ,
L0002346    , L0002347    , L0002348    ,

             L0002349    , L0002350    , L0002351    , L0002352    , L0002353    ,
L0002354    , L0002355    , L0002356    ,

             L0002357    , L0002358    , L0002359    , L0002360    , L0002361    ,
L0002362    , L0002363    , L0002364    ,

             L0002365    , L0002366    , L0002367    , L0002368    , L0002369    ,
L0002370    , L0002371    , L0002372    ,

             L0002373    , L0002374    , L0002375    , L0002376    , L0002377    ,
L0002378    , L0002379    , L0002380    ,

             L0002381    , L0002382    , L0002383    , L0002384    , L0002385    ,
L0002386    , L0002387    , L0002388    ,

             L0002389    , L0002390    , L0002391    , L0002392    , L0002393    ,
L0002394    , L0002395    , L0002396    ,

             L0002397    , L0002398    , L0002399    , L0002400    , L0002401    ,
L0002402    , L0002403    , L0002404    ,

             L0002405    , L0002406    , L0002407    , L0002408    , L0002409    ,
L0002410    , L0002411    , L0002412    ,

             L0002413    , L0002414    , L0002415    , L0002416    , L0002417    ,
L0002418    , L0002419    , L0002420    ,

             L0002421    , L0002422    , L0002423    , L0002424    , L0002425    ,
L0002426    , L0002427    , L0002428    ,

             L0002429    , L0002430    , L0002431    , L0002432    , L0002433    ,
L0002434    , L0002435    , L0002436    ,

             L0002437    , L0002438    , L0002439    , L0002440    , L0002441    ,
L0002442    , L0002443    , L0002444    ,

             L0002445    , L0002446    , L0002447    , L0002448    , L0002449    ,
L0002450    , L0002451    , L0002452    ,

             L0002453    , L0002454    , L0002455    , L0002456    , L0002457    ,
L0002458    , L0002459    , L0002460    ,
↑ *** AERMOD - VERSION 21112  ***   *** C:\LAKES\AERMOD VIEW\14042-04 HRA\14042-04
HRA.ISC                    ***        11/15/21
 *** AERMET - VERSION  16216 ***   ***
                          ***       12:38:15
```

*** SOURCE IDs DEFINED AS URBAN SOURCES ***

URBAN ID	URBAN POP	SOURCE IDs
		L0002461 , L0002462 , L0002463 , L0002464 , L0002465 , L0002466 , L0002467 , L0002468 ,
		L0002469 , L0002470 , L0002471 , L0002472 , L0002473 , L0002474 , L0002475 , L0002476 ,
		L0002477 , L0002478 , L0002479 , L0002480 , L0002481 , L0002482 , L0002483 , L0002484 ,
		L0002485 , L0002486 , L0002487 , L0002488 , L0002489 , L0002490 ,

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(437647.4, 3725381.2, 206.4, 220.0, 0.0); (437647.8, 3725437.9, 205.0, 220.0, 0.0);
(437433.2, 3725564.0, 220.3, 227.0, 0.0); (437741.3, 3725421.1, 213.6, 213.6, 0.0);
(437877.8, 3725281.4, 217.6, 217.6, 0.0); (437660.7, 3725039.4, 203.9, 215.0, 0.0);
(437491.0, 3724977.0, 201.6, 201.6, 0.0); (437804.8, 3725248.7, 219.7, 219.7, 0.0);
(437708.2, 3725187.8, 214.6, 214.6, 0.0); (437642.0, 3725154.2, 212.2, 214.0, 0.0);
(437686.3, 3725168.6, 214.4, 214.4, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***

(1=YES; 0=NO)

```
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: MSVJ_V9_ADJU\MSVJ_V9.SFC
Met Version: 16216
Profile file: MSVJ_V9_ADJU\MSVJ_V9.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 93184 Upper air station no.: 3190
Name: UNKNOWN Name: UNKNOWN

Year: 2011 Year: 2011

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
11	01	01	1	01	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.29	2.80	1.00	1.30	54.	9.1	999.0	-9.0
11	01	01	1	02	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.29	2.80	1.00	0.90	190.	9.1	999.0	-9.0
11	01	01	1	03	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.29	2.80	1.00	0.90	133.	9.1	999.0	-9.0
11	01	01	1	04	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.29	2.80	1.00	999.00	999.	-9.0	999.0	-9.0
11	01	01	1	05	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.29	2.80	1.00	999.00	999.	-9.0	999.0	-9.0
11	01	01	1	06	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.29	2.80	1.00	0.90	151.	9.1	999.0	-9.0
11	01	01	1	07	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.29	2.80	1.00	0.90	42.	9.1	999.0	-9.0
11	01	01	1	08	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.29	2.80	0.53	0.90	28.	9.1	999.0	-9.0
11	01	01	1	09	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.29	2.80	0.31	0.90	95.	9.1	999.0	-9.0
11	01	01	1	10	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.29	2.80	0.24	0.90	211.	9.1	999.0	-9.0
11	01	01	1	11	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.29	2.80	0.21	1.30	258.	9.1	999.0	-9.0
11	01	01	1	12	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.29	2.80	0.20	1.30	268.	9.1	999.0	-9.0
11	01	01	1	13	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.29	2.80	0.20	1.30	220.	9.1	999.0	-9.0
11	01	01	1	14	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.29	2.80	0.21	1.30	247.	9.1	999.0	-9.0
11	01	01	1	15	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.29	2.80	0.25	1.30	249.	9.1	999.0	-9.0
11	01	01	1	16	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.29	2.80	0.33	2.20	209.	9.1	999.0	-9.0
11	01	01	1	17	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.29	2.80	0.61	1.30	196.	9.1	999.0	-9.0
11	01	01	1	18	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.29	2.80	1.00	0.90	132.	9.1	999.0	-9.0

```
 11 01 01   1 19 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.29   2.80
1.00    0.90   91.    9.1  999.0   -9.0
 11 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.29   2.80
1.00    0.90   67.    9.1  999.0   -9.0
 11 01 01   1 21 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.29   2.80
1.00    0.90   72.    9.1  999.0   -9.0
 11 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.29   2.80
1.00    0.90   65.    9.1  999.0   -9.0
 11 01 01   1 23 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.29   2.80
1.00    0.90   61.    9.1  999.0   -9.0
 11 01 01   1 24 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.29   2.80
1.00    0.90   41.    9.1  999.0   -9.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 11 01 01 01    5.5 0 -999.  -99.00  -999.0   99.0  -99.00  -99.00
 11 01 01 01    9.1 1   54.    1.30  -999.0   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
↑ *** AERMOD - VERSION 21112  ***   *** C:\LAKES\AERMOD VIEW\14042-04 HRA\14042-04
HRA.ISC                   ***        11/15/21
 *** AERMET - VERSION  16216 ***   ***
                          ***       12:38:15

                                    PAGE  20
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5
YEARS FOR SOURCE GROUP: ALL      ***
                                    INCLUDING SOURCE(S):     L0002141    , L0002142
 , L0002143    , L0002144    , L0002145    ,
                   L0002146    , L0002147    , L0002148    , L0002149    , L0002150
 , L0002151    , L0002152    , L0002153    ,
                   L0002154    , L0002155    , L0002156    , L0002157    , L0002158
 , L0002159    , L0002160    , L0002161    ,
                   L0002162    , L0002163    , L0002164    , L0002165    , L0002166
 , L0002167    , L0002168    ,  . . .      ,

                                                *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                             ** CONC OF DPM      IN MICROGRAMS/M**3
                     **

       X-COORD (M)   Y-COORD (M)        CONC                        X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - -
         437647.38    3725381.21        0.00118                       437647.84
```

3725437.92   0.00046
         437433.25   3725564.04   0.00011   437741.29
3725421.13   0.00063
         437877.85   3725281.40   0.00035   437660.72
3725039.43   0.00029
         437490.99   3724976.98   0.00023   437804.84
3725248.66   0.00077
         437708.23   3725187.81   0.00163   437642.04
3725154.19   0.00110
         437686.35   3725168.60   0.00129

 *** MODELOPTs: RegDFAULT CONC ELEV URBAN ADJ_U*

                                    *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS
AVERAGED OVER   5 YEARS ***

                                     ** CONC OF DPM   IN MICROGRAMS/M**3
               **

                         NETWORK
GROUP ID   AVERAGE CONC   RECEPTOR (XR, YR,
ZELEV, ZHILL, ZFLAG) OF TYPE GRID-ID
- -
- - - - - - - - - - - - - - - - - - -

ALL   1ST HIGHEST VALUE IS   0.00163 AT (437708.23, 3725187.81,
214.55,   214.55,   0.00) DC
          2ND HIGHEST VALUE IS   0.00129 AT (437686.35, 3725168.60,
214.42,   214.42,   0.00) DC
          3RD HIGHEST VALUE IS   0.00118 AT (437647.38, 3725381.21,
206.40,   220.00,   0.00) DC
          4TH HIGHEST VALUE IS   0.00110 AT (437642.04, 3725154.19,
212.20,   214.00,   0.00) DC
          5TH HIGHEST VALUE IS   0.00077 AT (437804.84, 3725248.66,
219.65,   219.65,   0.00) DC
          6TH HIGHEST VALUE IS   0.00063 AT (437741.29, 3725421.13,
213.62,   213.62,   0.00) DC
          7TH HIGHEST VALUE IS   0.00046 AT (437647.84, 3725437.92,
204.96,   220.00,   0.00) DC
          8TH HIGHEST VALUE IS   0.00035 AT (437877.85, 3725281.40,
217.60,   217.60,   0.00) DC
          9TH HIGHEST VALUE IS   0.00029 AT (437660.72, 3725039.43,

```
203.89,   215.00,    0.00)  DC
         10TH HIGHEST VALUE IS       0.00023 AT (  437490.99,  3724976.98,
201.55,   201.55,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
↑ *** AERMOD - VERSION 21112  ***   *** C:\LAKES\AERMOD VIEW\14042-04 HRA\14042-04
HRA.ISC                    ***        11/15/21
 *** AERMET - VERSION  16216 ***   ***
                       ***        12:38:15

                                   PAGE  22
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  URBAN  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            4 Warning Message(s)
 A Total of          868 Informational Message(s)

 A Total of        43848 Hours Were Processed

 A Total of           15 Calm Hours Identified

 A Total of          853 Missing Hours Identified (  1.95 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     860       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
      0.50
 ME W187     860       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

 MX W450   35065       CHKDAT: Record Out of Sequence in Meteorological File at:
  16010101
 MX W450   35065       CHKDAT: Record Out of Sequence in Meteorological File at:
1 year gap

    ************************************
    *** AERMOD Finishes Successfully ***
    ************************************
```

APPENDIX 2.3:

RISK CALCULATIONS

This page intentionally left blank

Table 1
Quantification of Carcinogenic Risks and Noncarcinogenic Hazards
-0.25 to 0 Age Bin Exposure Scenario

Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**								
					URF	CPF	DOSE	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(ug/m^3)	(mg/m^3)			(ug/m^3)$^{-1}$	(mg/kg/day)$^{-1}$	(mg/kg-day)		(ug/m^3)	(mg/kg/day)								
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
	0.00063	6.30E-07	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	2.2E-07	7.0E-09	5.0E+00	1.4E-03	1.3E-04							
TOTAL								7.0E-09			1.3E-04	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

** Key to Toxicological Endpoints

RESP	Respiratory System
CNS/PNS	Central/Peripheral Nervous System
CV/BL	Cardiovascular/Blood System
IMMUN	Immune System
KIDN	Kidney
GI/LV	Gastrointestinal System/Liver
REPRO	Reproductive System (e.g. teratogenic and developmental effects)
EYES	Eye irritation and/or other effects

Note: Exposure factors used to calculate contaminant intake

exposure frequency (days/year)	350
exposure duration (years)	0.25
inhalation rate (L/kg-day))	361
inhalation absorption factor	1
averaging time (years)	70
fraction of time at home	0.85
age sensitivity factor (age third trimester	10

Table 2
Quantification of Carcinogenic Risks and Noncarcinogenic Hazards
0-2 Age Bin Exposure Scenario

Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**								
					URF	CPF	DOSE	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(ug/m^3)	(mg/m^3)			(ug/m^3)$^{-1}$	(mg/kg/day)$^{-1}$	(mg/kg-day)		(ug/m^3)	(mg/kg/day)								
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
	0.00063	6.30E-07	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	6.6E-07	1.7E-07	5.0E+00	1.4E-03	1.3E-04							
TOTAL								1.7E-07			1.3E-04	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

** Key to Toxicological Endpoints

RESP	Respiratory System
CNS/PNS	Central/Peripheral Nervous System
CV/BL	Cardiovascular/Blood System
IMMUN	Immune System
KIDN	Kidney
GI/LV	Gastrointestinal System/Liver
REPRO	Reproductive System (e.g. teratogenic and developmental effects)
EYES	Eye irritation and/or other effects

Note: Exposure factors used to calculate contaminant intake

exposure frequency (days/year)	350
exposure duration (years)	2
inhalation rate (L/kg-day))	1090
inhalation absorption factor	1
averaging time (years)	70
fraction of time at home	0.85
age sensitivity factor (0 to 2 years old)	10

Table 3
Quantification of Carcinogenic Risks and Noncarcinogenic Hazards
2-16 Age Bin Exposure Scenario

Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**								
					URF	CPF	DOSE	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(ug/m^3)	(mg/m^3)			(ug/m^3)$^{-1}$	(mg/kg/day)$^{-1}$	(mg/kg-day)		(ug/m^3)	(mg/kg/day)								
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
	0.00063	6.30E-07	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	3.5E-07	1.6E-07	5.0E+00	1.4E-03	1.3E-04							
TOTAL								1.6E-07			1.3E-04	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

** Key to Toxicological Endpoints

RESP	Respiratory System
CNS/PNS	Central/Peripheral Nervous System
CV/BL	Cardiovascular/Blood System
IMMUN	Immune System
KIDN	Kidney
GI/LV	Gastrointestinal System/Liver
REPRO	Reproductive System (e.g. teratogenic and developmental effects)
EYES	Eye irritation and/or other effects

Note: Exposure factors used to calculate contaminant intake

exposure frequency (days/year)	350
exposure duration (years)	14
inhalation rate (L/kg-day))	572
inhalation absorption factor	1
averaging time (years)	70
fraction of time at home	0.72
age sensitivity factor (ages 2 to 16 years	3

Table 4
Quantification of Carcinogenic Risks and Noncarcinogenic Hazards
16-30 Age Bin Exposure Scenario

Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**									
					URF	CPF	DOSE	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
	(ug/m^3)	(mg/m^3)			$(ug/m^3)^{-1}$	$(mg/kg/day)^{-1}$	(mg/kg-day)		(ug/m^3)	(mg/kg/day)								
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
	0.00063	6.30E-07	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	1.6E-07	2.4E-08	5.0E+00	1.4E-03	1.3E-04							
TOTAL								2.4E-08			1.3E-04	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00

0.02

** Key to Toxicological Endpoints

RESP	Respiratory System
CNS/PNS	Central/Peripheral Nervous System
CV/BL	Cardiovascular/Blood System
IMMUN	Immune System
KIDN	Kidney
GI/LV	Gastrointestinal System/Liver
REPRO	Reproductive System (e.g. teratogenic and developmental effects)
EYES	Eye irritation and/or other effects

Note: Exposure factors used to calculate contaminant intake

exposure frequency (days/year)	350
exposure duration (years)	14
inhalation rate (L/kg-day))	261
inhalation absorption factor	1
averaging time (years)	70
fraction of time at home	0.73
age sensitivity factor (ages 16 to 30 years old)	1

Total Risk for All Age Bins (per million) 0.36

Table 5
Quantification of Carcinogenic Risks and Noncarcinogenic Risks
25-Year Worker Exposure Scenario

	Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**									
						URF	CPF	DOSE	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
		(ug/m^3)	(mg/m^3)			($ug/m^3)^{-1}$	$(mg/kg/day)^{-1}$	(mg/kg-day)		(ug/m^3)	(mg/kg/day)								
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
1	Diesel Particulates	1.63E-03	1.63E-06	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	2.6E-07	9.6E-08	5.0E+00	1.4E-03	3.3E-04							
	TOTAL								1.1E-07			3.6E-04	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
									0.11										

** Key to Toxicological Endpoints

RESP	Respiratory System
CNS/PNS	Central/Peripheral Nervous System
CV/BL	Cardiovascular/Blood System
IMMUN	Immune System
KIDN	Kidney
GI/LV	Gastrointestinal System/Liver
REPRO	Reproductive System (e.g. teratogenic and developmental effects)
EYES	Eye irritation and/or other effects

Note: Exposure factors used to calculate contaminant intake

exposure frequency (days/year)	250
exposure duration (years)	25
inhalation rate (L/kg-day))	230
inhalation absorption factor	1
averaging time (years)	70

Table 6
Quantification of Carcinogenic Risks and Noncarcinogenic Risks
9-Year School Child Exposure Scenario

	Source	Mass GLC		Weight Fraction	Contaminant	Carcinogenic Risk				Noncarcinogenic Hazards/ Toxicological Endpoints**									
						URF	CPF	DOSE	RISK	REL	RfD	RESP	CNS/PNS	CV/BL	IMMUN	KIDN	GI/LV	REPRO	EYES
		(ug/m^3)	(mg/m^3)			(ug/m^3)$^{-1}$	(mg/kg/day)$^{-1}$	(mg/kg-day)		(ug/m^3)	(mg/kg/day)								
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)
1	Diesel Particulates	2.30E-04	2.30E-07	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	6.5E-08	2.6E-08	5.0E+00	1.4E-03	4.6E-05							
	TOTAL								4.7E-08			8.2E-05	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00
									0.05										

** Key to Toxicological Endpoints

RESP	Respiratory System
CNS/PNS	Central/Peripheral Nervous System
CV/BL	Cardiovascular/Blood System
IMMUN	Immune System
KIDN	Kidney
GI/LV	Gastrointestinal System/Liver
REPRO	Reproductive System (e.g. teratogenic and developmental effects)
EYES	Eye irritation and/or other effects

Note: Exposure factors used to calculate contaminant intake

exposure frequency (days/year)	180
exposure duration (years)	9
inhalation rate (L/kg-day))	572
inhalation absorption factor	1
averaging time (years)	70
age sensitivity factor (ages 4-13)	3