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May 6, 2020

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**RE: Health Risk Screening Letter for the Riverside and Lincoln Fueling Station –
15209 Lincoln Street – City of Lake Elsinore, CA**

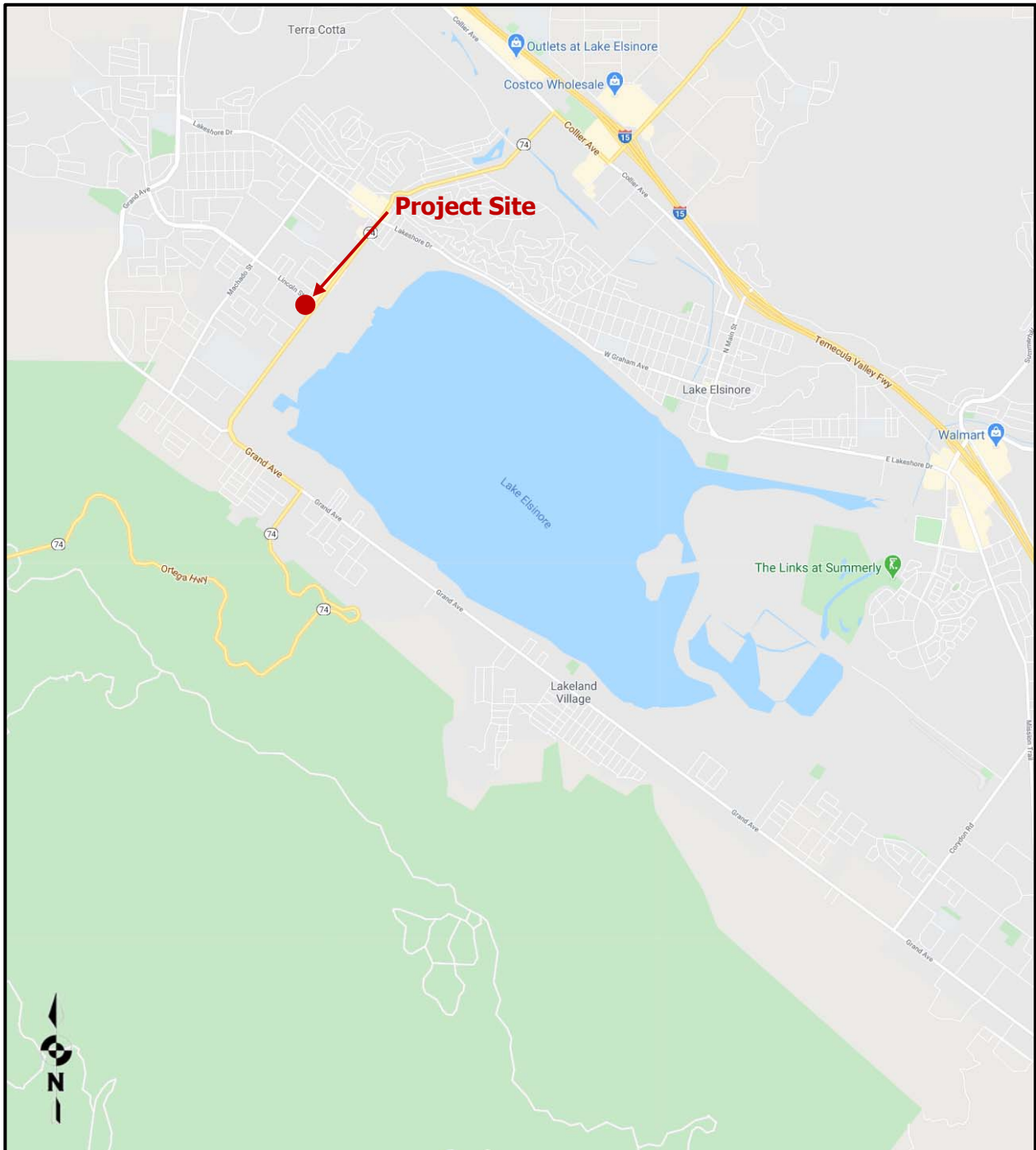
The purpose of this Air Quality Heath Risk screening letter is to identify potential health risks at the proposed project site from toxic air contaminants (TACs) or more specifically benzene from gasoline originating from the proposed fueling stations. A risk greater than 10 per million exposed would be considered an impact and would need to implement measures to reduce the risk to less than 10 per million exposed.

The proposed development is located on a 5.86 acre lot at 15209 Lincoln Street within the City of Lake Elsinore. Lincoln Street provides the northeastern boundary to the project site and Riverside Drive provides the southeastern boundary to the project site. Multifamily homes are to the northwest and single-family homes are to the southwest. Access to the project site will be provided by one driveway on Lincoln Street and two driveways on Riverside Drive. A general project vicinity map is shown in Figure 1 next page.

Project Description

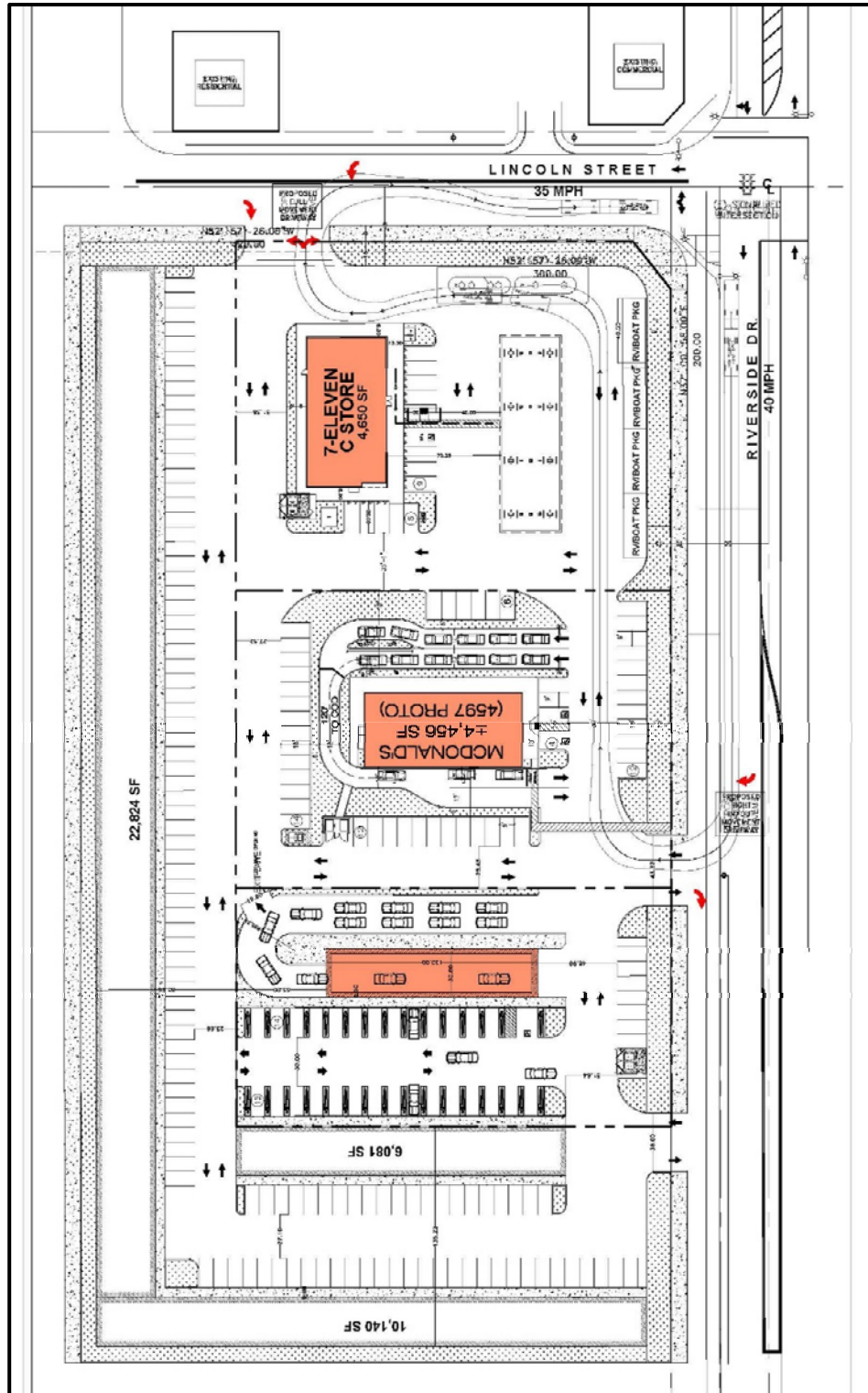
This project would construct a 39,463 square feet (SF) self-storage, a 4,456 SF of fast-food restaurant with drive-thru, a 16 fueling position super convenience market/gas station, and an automated car wash. The 16 fueling position super convenience market/gas station would install underground double wall fiberglass tanks for unleaded, super unleaded and diesel fuels and all appurtenances such as double wall fiberglass piping, leak detection and vapor recovery systems. The facility would also install an assisted Phase I system to provide maximum vapor balancing which is necessary to transfer the underground tank vapors being displaced as the tank is being filled back to the delivery tanker as it is being emptied. Also, the project would install Phase II system to transfer displaced vapors from vehicle fuel tanks back to the underground storage tanks. The throughput of the site would be between 1.7 and 2 million gallons of fuel. The project site plan is shown in Figure 2.

Figure 1: Project Vicinity Map



Source: (Google, 2020)

Figure 2: Site Plan Map



Source: (Golcheh Group, 2019)

Project Analysis

This health risk analysis uses the Gasoline Service Station Industrywide Risk Assessment Guidelines prepared by the Toxics Committee of the California Air Pollution Control Officers Association (CAPCOA, 1997) which was prepared with consultation with representatives of twelve air pollution control and air quality management districts, staff of the California Air Resources Board (CARB) and the Office of Environmental Health Hazard Assessment (OEHHA). The purpose of these guidelines is to provide the districts with suggested procedures for preparing gasoline station emissions inventories and risk assessments to meet the requirements of the Air Toxics "Hot Spots" Information and Assessment Act of 1987. For purposes of this health risk analysis, a Cancer risk in excess or 10 per one million exposed would require further mitigation.

This Project will be required to work with the City and the South Coast Air Quality Management District (SCAQMD) to obtain an authority to Construct and a Permit to Operate since the proposed project would install source equipment necessary at a fueling station.

Gas stations are required to install vapor recovery systems on all pumps and refuel tanks. The development will install Healy Model 900 enhanced vapor recovery (EVR) nozzles with a VP1000 Series vacuum pump EO number VR-201 VR-203 or similar vapor recovery system with underground storage tanks. Also, all underground tanks will be vented with pressure/vacuum liquid vent valves.

The nearest sensitive land uses around the project would be single family residential to the north approximately 230 feet to the nearest pump location. The area would be best described as an urban environment. Elevations onsite are roughly 1,280 feet above means sea level.

Cancer risk calculations are based on a 70 year lifetime exposure. In some limited cases, it may be appropriate to also use between 9 to 40 years exposure in the calculation. The 9 year exposure scenario is based on exposure to children during the first 9 years of life. Some districts use the 9 year exposure scenario to model short term projects. (CAPCOA, July 2009). For purposes of this analysis, it is reasonable to assume a 30 year duration.

Benzene emissions from the gas station would be from the following sources:

1. Loading: Loading emissions will occur when the fuel delivery trucks unload gasoline at the fueling station. These emissions would occur at the time of delivery only and would be reduced since the project will install pressure vacuum valves.
2. Breathing: Gasoline vapors are emitted from the storage tank vent pipes due to temperature and pressure changes within the storage tank vapor space
3. Refueling: During the refueling process, gasoline vapors are emitted at the vehicle/nozzle interface.

4. Spillage: Occasional spillage emissions occur from spills during vehicle fueling operations

The project specific site was modeled using CAPCOA's modeling parameters for a 6B scenario consisting of Phase I and Phase II operations including vent valves and an overall breathing and refueling efficiency of 90% (System is rated at 95%) as a worst-case input as the project design is characteristic of the proposed project site and are shown in **Attachment A** to this letter.

For purposes of modeling, AERMOD was used for air quality dispersion modeling and is the preferred/recommended U.S. Environmental Protection Agency (EPA) model for air quality dispersion modeling. The software has the ability to incorporate meteorological inputs as well as multiple source and receptor locations and is now used throughout the world. The model has been updated to include meteorological inputs for the Lake Elsinore Area. The input/output is shown in **Attachment B** to this letter.

The site will be expected to pump as much as 2 million gallons annually. The modeling results from AERMOD have been tabulated for the benzene emissions expected from the operations at the proposed site. All emission shown include effects from underground tank breathing, fuel loading, accidental spillage and refueling operations as shown by CAPCOA for the specific site. Also, specific discrete data for the sensitive residential receptors closest to the site are shown in Table 1.

Table 1: Annualized Benzene Concentrations at each Receptor

Receptor #	Concentration ($\mu\text{g}/\text{m}^3$) Per Million Gallons	Project Concentration ($\mu\text{g}/\text{m}^3$) 2 Million Gallons
1	0.042	0.084
2	0.028	0.056
3	0.015	0.03
4	0.011	0.022

A graphical representation of the modeling locations is shown on a site aerial below in Figure 3 on the following page. The loading and breathing events are represented by point sources (identified as a blue dot) and refueling and spillage events are represented by 16 volume sources (identified as red squares) representing each filling position. The four red points represent discrete sensitive receptors at nearby residential receptors. The black grid represents an automatically generated gridded receptor matrix used by AERMOD for the software to develop emission contours. Finally, the proposed convenience market and the fast food restaurant is represented by the blue facility outlines.

Figure 3: Modeling Setup Representation



Cancer Risk Exposure is evaluated by calculating the dose in milligrams per kilogram body weight per day (mg/kg/d). For residential exposure, the breathing rates are determined for specific age groups, so inhalation dose (Dose-air) is calculated for each of these age groups, 3rd trimester, 0<2, 2<9, 2<16, 16<30 and 16-70 years. The following algorithms calculate this dose for exposure through the inhalation pathways. The worst case cancer risk dose calculation is defined in Equation 1 below (OEHHA, 2015):

Equation 1

$$Dose_{air} = C_{air} * (BR/BW) * A * EF * (1 \times 10^{-6})$$

Dose _{air}	=	Dose through inhalation (mg/kg/d)
C _{air}	=	Concentration in air (µg/m ³) Annual average DPM concentration in µg/m ³ – From AERMOD
BR/BW	=	Daily breathing rate normalized to body weight (L/kg BW-day). See Table I.2 for the daily breathing rate for each age range.
A	=	Inhalation absorption factor (assumed to be 1)
EF	=	Exposure frequency (unitless, days/365 days)
1x10 ⁻⁶	=	Milligrams to micrograms conversion (10 ⁻³ mg/ µg), cubic meters to liters conversion (10 ⁻³ m ³ /l)

Once the dose is determined then you must calculate the cancer risk. The average daily inhalation dose (mg/kg-day) multiplied by the cancer potency factor (mg/kg-day)⁻¹ will give the inhalation cancer risk (unitless), which is an expression of the chemical's cancer risk during a 70-year lifespan of exposure. For example, an inhalation cancer risk of 5 x 10⁻⁶ is the same as stating that an individual has an estimated probability of developing cancer from their exposure of 5 chances per million people exposed. Cancer risk is calculated by multiplying the daily inhalation or oral dose, by a cancer potency factor, the age sensitivity factor, the frequency of time spent at home and the exposure duration divided by averaging time, to yield the excess cancer risk. As described below, the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk for any given location. The worst-case cancer risk calculation is defined in Equation 2 below (OEHHA, 2015).

Equation 2

$$RISK_{inh-res} = DOSE_{air} \times CPF \times ASF \times ED/AT \times FAH$$

RISK _{inh-res}	=	Residential inhalation cancer risk
DOSE _{air}	=	Daily inhalation dose (mg/kg-day)
CPF	=	Inhalation cancer potency factor (mg/kg-day) ⁻¹
ASF	=	Age sensitivity factor for a specified age group (unitless)
ED	=	Exposure duration (in years) for a specified age group
AT	=	Averaging time for lifetime cancer risk (years)
FAH	=	Fraction of time spent at home (unitless)

Findings/Results

The results of the cancer risk calculations are shown in Table 2 below and are shown in detail in ***Attachment C*** to this report. Based on these calculations, cancer risks would be less than ten in one million exposed which would not exceed significance thresholds.

Table 2: Cancer Risk at Worst-Case Receptors

Receptor	C _i	Cancer Risk	Impact
R1	0.289	0.614	No
R2	0.191	0.409	No
R3	0.102	0.219	No
R4	0.073	0.161	No

C_i annual inputs from AERMOD multiplied by 2 to represent throughput of 2,000,000 Gallons Gasoline – See Table 1 above
Cancer Risk = DOSE_{air} × CPF × ASF × ED/AT × FAH

If you should have any questions regarding this assessment, please do not hesitate to contact me at (760) 473-1253.

Sincerely,
Ldn Consulting



Jeremy Loudon

Attachments:

- A: AERMOD Modeling Parameters – CAPCOA Scenario 6B
- B: AERMOD Input/Output
- C: Cancer Risk Calculations

References:

CAPCOA. (1997). *Air Toxics "Hot Spots" Program - Gasoline Service Station Industrywide Risk Assessment Guidelines.*

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CAPCOA. (July 2009). *Health Risk Assessment for Proposed Land Use Projects*. California Air Pollution Control Officers Association .

Google. (2020). Retrieved from www.maps.google.com

OEHHA. (2015). *Risk Assessment Guidelines - Guidance Manual for Preparation of Health Risk Assessments*. OEHHHA. Retrieved from http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf

Attachment A – AERMOD Modeling Parameters – CAPCOA Scenario 6B

Scenario 6B - Phase I and Phase II, with Vent Valves

90% Overall Efficiency for Breathing and Refueling

Historical Emission Factors (lbs/1000 gal)	Current Emission Factors (lbs/1000 gal)	Process	Method of Derivation
	0.084	Loading	Aeroenvironment Study ⁴ indicated no emissions, but assumes emissions of 1% of uncontrolled emissions due to equipment failures or defects. $1\% \times 8.4 = 0.084$
	0.025	Breathing	Even though the Aeroenvironment Study ⁴ was not a leak tight test, it was assumed that the reported 75% emissions reductions (0.08 down to 0.02 lbs/gal) can be used to derive the effectiveness of vent valves. Thus, the breathing loss reduced by 75% equals $(0.1) (100-75\%) = 0.025$
	0.74	Refueling	Same as Scenario 6A
	0.42 ³	Spillage	JAWMA ³
	1.27	Total	

REFERENCES

1. BAAQMD continuous testing from 1/5/93-1/25/93 and from 2/11/93-2/22/93.
2. California Air Resources Board, "A Report to the Legislature on Gasoline Vapor Recovery Systems for Vehicle Fueling at Service Stations (Phase II Systems)", March, 1983.
3. James J. Morgester, Robert L. Fricker, G. Henry Jordan, "Comparison of Spill Frequencies and Amounts at Vapor Recovery and Conventional Service Stations in California", Journal of Air & Waste Management Association, Vol. 42, No 3, pp 284-289, March 1992.
4. Aeroenvironment, Inc., Prepared for WSPA, "Underground Storage Tank Vent Line Emissions from Retail Gasoline Outlets", Report # AV-FR-92-01-204R2, p. 3-23, May 1994.
5. Based on discussions among experts, the breathing emission factor for aboveground tanks should be higher than underground tanks due to the effects of diurnal changes, temperature fluctuations, sun and wind exposure that doesn't occur for underground tanks. The value chosen was not based on empirical data.

Point Source Loading Stack Exit Velocity (Per 1 MGD Unit Volume)

Annual Gasoline Throughput = 1,000,000 gal/yr
 Density of Liquid Gasoline = 6 lbs / gal
 Density of Gasoline/Air Vapor Mixture = 0.105 lb / ft³
 Radius of Stack = 1" = 0.0833 ft
 Area of Stack = $\pi r^2 = 0.0218 \text{ ft}^2$

$$\begin{aligned}
 \text{Average Emission Rate} &= \text{Emission Factor} \times \frac{1 \text{ MGalFuel}}{\text{year}} \\
 &= 0.084 \frac{\text{lb}}{1000 \text{ gal}} * 1,000,000 \frac{\text{gal}}{\text{year}} * \frac{1 \text{ yr}}{8760 \text{ hr}} * \frac{1 \text{ hr}}{3600 \text{ second}} * 454 \frac{\text{grams}}{\text{lb}} \\
 &= 0.00121 \text{ grams /second}
 \end{aligned}$$

$$\begin{aligned}
 \text{Average Vent Stack Exit Velocity} &= \frac{\text{MassEmissionRate}}{\text{Area} * \text{Density of Gas}} \\
 &= \frac{.000002665 \frac{\text{lb}}{\text{second}}}{0.218 \text{ ft}^2 * 0.105 \frac{\text{lbs}}{\text{ft}^3}} = 0.00116 \frac{\text{ft}}{\text{second}} * 0.3048 \frac{\text{m}}{\text{ft}} = .000355 \text{ m/second}
 \end{aligned}$$

Point Source Breathing Stack Exit Velocity (Per 1 MGD Unit Volume)

Annual Gasoline Throughput	= 1,000,000 gal/yr
Density of Liquid Gasoline	= 6 lbs / gal
Density of Gasoline/Air Vapor Mixture	= 0.105 lb / ft ³
Radius of Stack	= 1" = 0.0833 ft
Area of Stack	= πr^2 = 0.0218 ft ²

$$\text{Average Emission Rate} = \text{Emission Factor} \times \frac{1 \text{ MGalFuel}}{\text{year}}$$

$$= 0.025 \frac{\text{lb}}{1000 \text{ gal}} * 1,000,000 \frac{\text{gal}}{\text{year}} * \frac{1 \text{ yr}}{8760 \text{ hr}} * \frac{1 \text{ hr}}{3600 \text{ second}} * 454 \frac{\text{grams}}{\text{lb}}$$

$$= 0.000359 \text{ grams/second}$$

$$\text{Average Vent Stack Exit Velocity} = \frac{\text{MassEmissionRate}}{\text{Area} * \text{Density of Gas}}$$

$$= \frac{.000000793 \frac{\text{lb}}{\text{second}}}{0.218 \text{ ft}^2 * 0.105 \frac{\text{lbs}}{\text{ft}^3}} = 0.000346 \frac{\text{ft}}{\text{second}} * 0.3048 \frac{\text{m}}{\text{ft}} = .000106 \text{ m/second}$$

Point Source Loading Benzene Emission Rates (Per 1 MGD Unit Volume)

$$\text{Average Emission Rate} = \text{Emission Factor} \times \frac{1 \text{ MGalFuel}}{\text{year}}$$

$$= 0.084 \frac{\text{lb}}{1000 \text{ gal}} * 1,000,000 \frac{\text{gal}}{\text{year}} * \frac{1 \text{ yr}}{8760 \text{ hr}} * \frac{1 \text{ hr}}{3600 \text{ second}} * 454 \frac{\text{grams}}{\text{lb}}$$

$$= 0.00121 \text{ grams Gasoline /second}$$

Benzene in gasoline Vapor is 0.3%

$$\text{Average Benzene Emission Rate} = \text{Emission Rate Gasoline} \times 0.3\%$$

$$= 0.00121 \text{ grams Gasoline /second} * 0.003 = 0.00000363 \text{ grams benzene/second}$$

Point Source Loading Benzene Emission Rates (Per 1 MGD Unit Volume)

$$\text{Average Emission Rate} = \text{Emission Factor} \times \frac{1 \text{ MGalFuel}}{\text{year}}$$

$$= 0.025 \frac{\text{lb}}{1000 \text{ gal}} * 1,000,000 \frac{\text{gal}}{\text{year}} * \frac{1 \text{ yr}}{8760 \text{ hr}} * \frac{1 \text{ hr}}{3600 \text{ second}} * 454 \frac{\text{grams}}{\text{lb}}$$

$$= 0.000359 \text{ grams/second}$$

Benzene in gasoline Vapor is 0.3%

$$\text{Average Benzene Emission Rate} = \text{Emission Rate Gasoline} \times 0.3\%$$

$$= 0.000359 \text{ grams Gasoline /second} * 0.003 = 0.00000108 \text{ grams benzene/second}$$

Refueling Mass Benzene Emission Rates (Per 1 MGD Unit Volume)

$$\begin{aligned} \text{Average Emission Rate} &= \text{Emission Factor} \times \frac{1 \text{ MGalFuel}}{\text{year}} \\ &= 0.74 \frac{\text{lb}}{1000 \text{ gal}} * 1,000,000 \frac{\text{gal}}{\text{year}} * \frac{1 \text{ yr}}{8760 \text{ hr}} * \frac{1 \text{ hr}}{3600 \text{ second}} * 454 \frac{\text{grams}}{\text{lb}} \\ &= 0.01065 \text{ grams/second} \end{aligned}$$

Benzene in gasoline Vapor is 0.3%

$$\begin{aligned} \text{Average Benzene Emission Rate} &= \text{Emission Rate Gasoline} \times 0.3\% \\ &= 0.01065 \text{ grams Gasoline /second} * 0.003 = 0.0000320 \text{ grams benzene/second} \end{aligned}$$

Spillage Mass Benzene Emission Rates (Per 1 MGD Unit Volume)

$$\begin{aligned} \text{Average Emission Rate} &= \text{Emission Factor} \times \frac{1 \text{ MGalFuel}}{\text{year}} \\ &= 0.42 \frac{\text{lb}}{1000 \text{ gal}} * 1,000,000 \frac{\text{gal}}{\text{year}} * \frac{1 \text{ yr}}{8760 \text{ hr}} * \frac{1 \text{ hr}}{3600 \text{ second}} * 454 \frac{\text{grams}}{\text{lb}} \\ &= 0.00605 \text{ grams/second} \end{aligned}$$

Benzene in gasoline Liquid is 1%

$$\begin{aligned} \text{Average Benzene Emission Rate} &= \text{Emission Rate Gasoline} \times 1\% \\ &= 0.00605 \text{ grams Gasoline /second} * 0.01 = 0.0000605 \text{ grams benzene/second} \end{aligned}$$

1

AERMOD PRIME - (DATED 19191)

AERMODPrMSPx VERSION
(C) COPYRIGHT 1998-2017, Trinity Consultants

Run Began on 5/01/2020 at 15:16:51

** BREEZE AERMOD
** Trinity Consultants
** VERSION 9.0

CO STARTING
CO TITLEONE Benzene
CO MODELOPT DFAULT CONC NODRYDPLT NOWETDPLT
CO RUNORNOT RUN
CO AVERTIME ANNUAL
CO POLLUTID OTHER
CO FINISHED

SO STARTING	SO ELEVUNIT	METERS	SO LOCATION	POINT	465285.7	3726338.6	0
** SRCDESCR	Loading						
SO LOCATION	QYSS4004	POINT	465285.7	3726338.6	0		
** SRCDESCR	Breathing						
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SO	SRCPARAM	QYS5400D	3.78E-06	1	3	4		
SO	SRCPARAM	QYS5400E	3.78E-06	1	3	4		
SO	SRCPARAM	QYS5400F	3.78E-06	1	3	4		
SO	SRCPARAM	QYS5400G	3.78E-06	1	3	4		
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SO	BUILDWID	QYS54001	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDWID	QYS54001	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDWID	QYS54001	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDWID	QYS54001	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDLEN	QYS54001	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDLEN	QYS54001	0.00	0.00	0.00	0.00	0.00	0.00
SO	BUILDLEN	QYS54001	0.00	0.00	0.00	0.00	0.00	0.00


```

RE GRIDCART QYS5401Q ELEV 17 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q ELEV 18 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q ELEV 19 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q ELEV 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q ELEV 21 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q HILL 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q HILL 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q HILL 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q HILL 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q HILL 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q HILL 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q HILL 7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q HILL 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q HILL 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q HILL 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q HILL 11 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q HILL 12 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q HILL 13 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q HILL 14 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q HILL 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q HILL 16 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q HILL 17 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q HILL 18 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q HILL 19 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q HILL 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q HILL 21 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RE GRIDCART QYS5401Q END
RE DISCCART 465255.6 3726399.7 0 0
** SENSITIV
** RCPDESCR H1
RE DISCCART 465175.6 3726376.6 0 0
** SENSITIV
** RCPDESCR H2
RE DISCCART 465123.7 3726308 0 0
** SENSITIV
** RCPDESCR H3
RE DISCCART 465161.2 3726157.4 0 0
** SENSITIV
** RCPDESCR H4
RE FINISHED

```

```

ME STARTING
ME SURFFILE "C:\Users\ryan\OneDrive\LDN One Drive 2\County of Riverside\City of Lake Elsinore\20-15 Riverside and
Lincoln\AERMOD\Lake Elsinore\elsi8.sfc"
** SURFFILE "C:\Users\ryan\OneDrive\LDN One Drive 2\County of Riverside\City of Lake Elsinore\20-15 Riverside and
Lincoln\AERMOD\Lake Elsinore\elsi8.sfc"
ME PROFFILE "C:\Users\ryan\OneDrive\LDN One Drive 2\County of Riverside\City of Lake Elsinore\20-15 Riverside and
Lincoln\AERMOD\Lake Elsinore\elsi8.pfl"
** PROFFILE "C:\Users\ryan\OneDrive\LDN One Drive 2\County of Riverside\City of Lake Elsinore\20-15 Riverside and
Lincoln\AERMOD\Lake Elsinore\elsi8.pfl"
ME SURFDATA 0 2008
ME UAIRDATA 3190 2008
ME SITEDATA 00099999 2008
ME PROFBASE 0 METERS
ME STARTEND 2011 1 1 1 2012 12 31 24
ME FINISHED

```

```

OU STARTING
OU FILEFORM FIX
OU PLOTFILE ANNUAL ALL ALL`ANNUAL.plt 10000
OU FINISHED

```

```

** *****
** It is recommended that the user not edit any data below this line
** *****

```

```

** BUILDING BLD 0 0 0 5 5
** BUILDING IDN QYS54002
** BUILDING NAM Building1

```

```

** BUILDING CRN 465239.4 3726357.9
** BUILDING CRN 465221.7 3726336.8
** BUILDING CRN 465233.7 3726327.7
** BUILDING CRN 465251 3726349.3
** BUILDING CRN 465239.4 3726357.9
** BUILDING BLD 0 0 0 5 5
** BUILDING IDN QYS54003
** BUILDING NAM Building 2
** BUILDING CRN 465206.9 3726300.1
** BUILDING CRN 465229.9 3726282.1
** BUILDING CRN 465221.7 3726271.2
** BUILDING CRN 465198.2 3726288.7
** BUILDING CRN 465206.9 3726300.1

** AMPATYPE
** AMPDATUM -1
** AMPZONE -1
** AMPHEMISPHERE

** PROJECTIONWKT
PROJCS["UTM_6326_Zone11",GEOGCS["WGS_84",DATUM["World_Geodetic_System_1984",SPHEROID["WGS_1984",6378137,298.2572235
63],TOWGS84[0,0,0,0,0,0,0,0,0,0,0,0]],PRIMEM["Greenwich",0],UNIT["Degree",0.0174532925199433]],PROJECTION["Universal_Transver
se_Mercator"],PARAMETER["Zone",11],UNIT["Meter",1,AUTHORITY["EPSG","9001"]]]]
** PROJECTION UTM
** DATUM WGE
** UNITS METER
** ZONE 11
** HEMISPHERE N
** ORIGINLON 0
** ORIGINLAT 0
** PARALLEL1 0
** PARALLEL2 0
** AZIMUTH 0
** SCALEFACT 0
** FALSEEAST 0
** FALSENORTH 0

** POSTFMT UNIFORM
** TEMPLATE UserDefined
** AERMODEXE AERMOD_BREEZE_19191_64.EXE
** AERMAPEXE AERMAP_EPA_18081_64.exe

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

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05/01/20
*** AERMET - VERSION 14134 *** ***
15:16:51

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*** MODELOPTs: RegDFault CONC ELEV NODRYDPLT NOWETDPLT RURAL

*** 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 RURAL Dispersion Only.

```

```

**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.

**Other Options Specified:
  TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of:  OTHER

**Model Calculates ANNUAL Averages Only

**This Run Includes:      34 Source(s);      1 Source Group(s); and      445 Receptor(s)

                        with:      2 POINT(s), including
                                0 POINTCAP(s) and      0 POINTHOR(s)
                        and:      32 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      0 line(s)

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

**The AERMET Input Meteorological Data Version Date:  14134

**Output Options Selected:
  Model Outputs Tables of ANNUAL Averages by Receptor
  Model Outputs External File(s) of High Values for Plotting (PLOTFILE 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) =      0.00 ; 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 =      3.6 MB of RAM.

**Input Runstream File:      aermod.inp

**Output Print File:      aermod.out

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*** MODELOPTS:      RegDEFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL

                                *** POINT SOURCE DATA ***

CAP/  NUMBER EMISSION RATE      BASE      STACK      STACK      STACK      STACK      BLDG      URBAN
SOURCE  PART.  (GRAMS/SEC)      X      Y      ELEV.      HEIGHT  TEMP.      EXIT VEL.  DIAMETER  EXISTS  SOURCE
HOR      SCALAR
ID      CATS.      (METERS) (METERS) (METERS) (METERS) (DEG.K) (M/SEC) (METERS)

```

VARY BY

QYS54001 0 0.36300E-05 465285.7 3726338.6 0.0 3.66 291.00 0.00 0.05 NO NO
NO
QYS54004 0 0.10800E-05 465285.7 3726338.6 0.0 3.66 288.70 0.00 0.05 NO NO
NO
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*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
QYS54007	0	0.37800E-05	465250.1	3726310.3	0.0	1.00	3.00	4.00	NO	
QYS54008	0	0.37800E-05	465248.6	3726308.4	0.0	1.00	3.00	4.00	NO	
QYS54009	0	0.37800E-05	465253.9	3726303.9	0.0	1.00	3.00	4.00	NO	
QYS5400A	0	0.37800E-05	465254.0	3726316.0	0.0	1.00	3.00	4.00	NO	
QYS5400B	0	0.37800E-05	465255.9	3726318.4	0.0	1.00	3.00	4.00	NO	
QYS5400C	0	0.37800E-05	465259.9	3726311.7	0.0	1.00	3.00	4.00	NO	
QYS5400D	0	0.37800E-05	465261.6	3726313.6	0.0	1.00	3.00	4.00	NO	
QYS5400E	0	0.37800E-05	465267.6	3726321.4	0.0	1.00	3.00	4.00	NO	
QYS5400F	0	0.37800E-05	465266.3	3726319.2	0.0	1.00	3.00	4.00	NO	
QYS5400G	0	0.37800E-05	465262.4	3726325.8	0.0	1.00	3.00	4.00	NO	
QYS5400H	0	0.37800E-05	465260.8	3726323.9	0.0	1.00	3.00	4.00	NO	
QYS5400I	0	0.37800E-05	465272.8	3726327.3	0.0	1.00	3.00	4.00	NO	
QYS5400J	0	0.37800E-05	465274.2	3726329.1	0.0	1.00	3.00	4.00	NO	
QYS5400K	0	0.37800E-05	465267.0	3726331.8	0.0	1.00	3.00	4.00	NO	
QYS54013	0	0.20062E-05	465250.1	3726310.3	0.0	1.00	3.00	4.00	NO	
QYS54014	0	0.20062E-05	465248.6	3726308.4	0.0	1.00	3.00	4.00	NO	
QYS54015	0	0.20062E-05	465253.9	3726303.9	0.0	1.00	3.00	4.00	NO	
QYS54016	0	0.20062E-05	465254.0	3726316.0	0.0	1.00	3.00	4.00	NO	
QYS54017	0	0.20062E-05	465255.9	3726318.4	0.0	1.00	3.00	4.00	NO	
QYS54018	0	0.20062E-05	465259.9	3726311.7	0.0	1.00	3.00	4.00	NO	
QYS54019	0	0.20062E-05	465261.6	3726313.6	0.0	1.00	3.00	4.00	NO	
QYS5401A	0	0.20062E-05	465267.6	3726321.4	0.0	1.00	3.00	4.00	NO	
QYS5401B	0	0.20062E-05	465266.3	3726319.2	0.0	1.00	3.00	4.00	NO	
QYS5401C	0	0.20062E-05	465262.4	3726325.8	0.0	1.00	3.00	4.00	NO	
QYS5401D	0	0.20062E-05	465260.8	3726323.9	0.0	1.00	3.00	4.00	NO	
QYS5401E	0	0.20062E-05	465272.8	3726327.3	0.0	1.00	3.00	4.00	NO	
QYS5401F	0	0.20062E-05	465274.2	3726329.1	0.0	1.00	3.00	4.00	NO	
QYS5401G	0	0.20062E-05	465267.0	3726331.8	0.0	1.00	3.00	4.00	NO	
QYS5401H	0	0.37800E-05	465269.1	3726333.5	0.0	1.00	3.00	4.00	NO	
QYS5401I	0	0.20062E-05	465255.6	3726305.7	0.0	1.00	3.00	4.00	NO	
QYS5401J	0	0.20062E-05	465269.1	3726333.5	0.0	1.00	3.00	4.00	NO	
QYS5401K	0	0.37800E-05	465255.6	3726305.7	0.0	1.00	3.00	4.00	NO	

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*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID

SOURCE IDs

```

-----
ALL      QYS54001  , QYS54004  , QYS54007  , QYS54008  , QYS54009  , QYS5400A  , QYS5400B  ,
QYS5400C  ,
QYS5400K  , QYS5400D  , QYS5400E  , QYS5400F  , QYS5400G  , QYS5400H  , QYS5400I  , QYS5400J  ,
QYS5401A  , QYS54013  , QYS54014  , QYS54015  , QYS54016  , QYS54017  , QYS54018  , QYS54019  ,
QYS5401I  , QYS5401B  , QYS5401C  , QYS5401D  , QYS5401E  , QYS5401F  , QYS5401G  , QYS5401H  ,
QYS5401J  , QYS5401K  ,
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 *** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: QYS5401Q ; NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
 (METERS)

464892.0, 464925.8, 464959.6, 464993.4, 465027.2, 465061.0, 465094.8, 465128.6, 465162.4, 465196.2,
 465230.0, 465263.8, 465297.6, 465331.4, 465365.2, 465399.0, 465432.8, 465466.6, 465500.4, 465534.2,
 465568.0,

*** Y-COORDINATES OF GRID ***
 (METERS)

3726577.8, 3726547.1, 3726516.4, 3726485.7, 3726455.0, 3726424.3, 3726393.6, 3726362.9, 3726332.2, 3726301.5,
 3726270.8, 3726240.1, 3726209.4, 3726178.7, 3726148.0, 3726117.3, 3726086.6, 3726055.9, 3726025.2, 3725994.5,
 3725963.8,

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 *** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL

*** NETWORK ID: QYS5401Q ; NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	464892.00	464925.80	464959.60	464993.40	465027.20	465061.00	465094.80
465128.60	465162.40						

3725963.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00							
3725994.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00							
3726025.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00							
3726055.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00							
3726086.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00							

*** NETWORK ID: QYS5401Q ; NETWORK TYPE: GRIDCART ***

* HILL HEIGHT SCALES IN METERS *

Y-COORD (METERS)					X-COORD (METERS)			
465128.60	465162.40	464892.00	464925.80	464959.60	464993.40	465027.20	465061.00	465094.80

3725963.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00							
3725994.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00							
3726025.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00							
3726055.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00							
3726086.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00							
3726117.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00							
3726148.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00							
3726178.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00							
3726209.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00							
3726240.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00							
3726270.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00							
3726301.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00							
3726332.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00							
3726362.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00							
3726393.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00							
3726424.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00							
3726455.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00							
3726485.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00							
3726516.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00							
3726547.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00							
3726577.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00							

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*** MODELOPTs: RegDFault CONC ELEV NODRYDPLT NOWETDPLT RURAL

*** NETWORK ID: QYS5401Q ; NETWORK TYPE: GRIDCART ***

* HILL HEIGHT SCALES IN METERS *

Y-COORD (METERS)					X-COORD (METERS)			
465432.80	465466.60	465196.20	465230.00	465263.80	465297.60	465331.40	465365.20	465399.00

Y-COORD (METERS)	X-COORD (METERS)		
	465500.40	465534.20	465568.00
3725963.80	0.00	0.00	0.00
3725994.50	0.00	0.00	0.00
3726025.20	0.00	0.00	0.00
3726055.90	0.00	0.00	0.00
3726086.60	0.00	0.00	0.00
3726117.30	0.00	0.00	0.00
3726148.00	0.00	0.00	0.00
3726178.70	0.00	0.00	0.00
3726209.40	0.00	0.00	0.00

3726240.10	0.00	0.00	0.00
3726270.80	0.00	0.00	0.00
3726301.50	0.00	0.00	0.00
3726332.20	0.00	0.00	0.00
3726362.90	0.00	0.00	0.00
3726393.60	0.00	0.00	0.00
3726424.30	0.00	0.00	0.00
3726455.00	0.00	0.00	0.00
3726485.70	0.00	0.00	0.00
3726516.40	0.00	0.00	0.00
3726547.10	0.00	0.00	0.00
3726577.80	0.00	0.00	0.00

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*** AERMET - VERSION 14134 *** ***

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*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

SOURCE ID	- - RECEPTOR XR (METERS)	LOCATION - - YR (METERS)	DISTANCE (METERS)
QYS5400G	465263.8	3726332.2	0.10
QYS5400K	465263.8	3726332.2	-3.23
QYS5401C	465263.8	3726332.2	0.10
QYS5401G	465263.8	3726332.2	-3.23
QYS5401H	465263.8	3726332.2	-0.99
QYS5401J	465263.8	3726332.2	-0.99

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*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL

*** 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 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1
1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1
1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1

METEOROLOGICAL DATA PROCESSED BETWEEN START DATE: 2011 1 1 1
AND END DATE: 2012 12 31 24

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,
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 *** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL

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

Surface file: C:\Users\ryan\OneDrive\LDN One Drive 2\County of Riverside\City of Lake Elsinore Met Version:
 14134
 Profile file: C:\Users\ryan\OneDrive\LDN One Drive 2\County of Riverside\City of Lake Elsinore
 Surface format: FREE

Profile format: FREE

Surface station no.: 0 Upper air station no.: 3190
 Name: UNKNOWN Name: UNKNOWN
 Year: 2008 Year: 2008

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
08	01	01	1	01	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-999999.0	0.23	1.00	1.00	999.00	999.	-9.0	284.2			
5.5																					
08	01	01	1	02	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-999999.0	0.23	1.00	1.00	999.00	999.	-9.0	283.1			
5.5																					
08	01	01	1	03	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-999999.0	0.23	1.00	1.00	999.00	999.	-9.0	283.1			
5.5																					
08	01	01	1	04	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-999999.0	0.23	1.00	1.00	999.00	999.	-9.0	283.8			
5.5																					
08	01	01	1	05	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-999999.0	0.23	1.00	1.00	999.00	999.	-9.0	283.8			
5.5																					
08	01	01	1	06	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-999999.0	0.23	1.00	1.00	999.00	999.	-9.0	283.8			
5.5																					
08	01	01	1	07	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-999999.0	0.23	1.00	1.00	999.00	999.	-9.0	283.1			
5.5																					
08	01	01	1	08	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-999999.0	0.23	1.00	0.54	999.00	999.	-9.0	283.8			
5.5																					
08	01	01	1	09	27.2	-9.000	-9.000	-9.000	60.	-999.	-999999.0	0.23	1.00	0.33	999.00	999.	-9.0	285.9			
5.5																					
08	01	01	1	10	74.6	-9.000	-9.000	-9.000	157.	-999.	-999999.0	0.23	1.00	0.25	999.00	999.	-9.0	288.1			
5.5																					
08	01	01	1	11	107.4	-9.000	-9.000	-9.000	375.	-999.	-999999.0	0.23	1.00	0.23	999.00	999.	-9.0	289.9			
5.5																					
08	01	01	1	12	122.7	-9.000	-9.000	-9.000	578.	-999.	-999999.0	0.23	1.00	0.22	999.00	999.	-9.0	289.9			
5.5																					
08	01	01	1	13	121.3	-9.000	-9.000	-9.000	714.	-999.	-999999.0	0.23	1.00	0.22	999.00	999.	-9.0	291.4			
5.5																					
08	01	01	1	14	102.1	-9.000	-9.000	-9.000	763.	-999.	-999999.0	0.23	1.00	0.23	999.00	999.	-9.0	292.0			
5.5																					
08	01	01	1	15	65.8	-9.000	-9.000	-9.000	792.	-999.	-999999.0	0.23	1.00	0.27	999.00	999.	-9.0	291.4			
5.5																					
08	01	01	1	16	16.0	-9.000	-9.000	-9.000	798.	-999.	-999999.0	0.23	1.00	0.36	999.00	999.	-9.0	290.4			
5.5																					
08	01	01	1	17	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-999999.0	0.23	1.00	0.63	999.00	999.	-9.0	288.8			
5.5																					
08	01	01	1	18	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-999999.0	0.23	1.00	1.00	999.00	999.	-9.0	287.5			
5.5																					
08	01	01	1	19	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-999999.0	0.23	1.00	1.00	999.00	999.	-9.0	286.4			
5.5																					
08	01	01	1	20	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-999999.0	0.23	1.00	1.00	999.00	999.	-9.0	285.4			

5.5
08 01 01 1 21 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0 0.23 1.00 1.00 999.00 999. -9.0 284.2
5.5
08 01 01 1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0 0.23 1.00 1.00 999.00 999. -9.0 283.1
5.5
08 01 01 1 23 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0 0.23 1.00 1.00 999.00 999. -9.0 283.1
5.5
08 01 01 1 24 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0 0.23 1.00 1.00 999.00 999. -9.0 282.5
5.5

First hour of profile data
YR MO DY HR HEIGHT F WDIR WSPD AMB_TMP sigmaA sigmaW sigmaV
08 01 01 01 5.5 0 -999. -99.00 284.3 99.0 -99.00 -99.00
08 01 01 01 9.1 1 -999. -99.00 -999.0 99.0 -99.00 -99.00

F indicates top of profile (=1) or below (=0)

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*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 2 YEARS FOR SOURCE GROUP: ALL

INCLUDING SOURCE(S): QYS54001 , QYS54004 , QYS54007 , QYS54008 ,
QYS54009 ,
QYS5400A , QYS5400B , QYS5400C , QYS5400D , QYS5400E , QYS5400F , QYS5400G ,
QYS5400H ,
QYS5400I , QYS5400J , QYS5400K , QYS54013 , QYS54014 , QYS54015 , QYS54016 ,
QYS54017 ,
QYS54018 , QYS54019 , QYS5401A , QYS5401B , QYS5401C , QYS5401D , QYS5401E ,
. . . ,

*** NETWORK ID: QYS5401Q ; NETWORK TYPE: GRIDCART ***

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

**

Y-COORD (METERS)				X-COORD (METERS)			
465128.60	465162.40	464892.00	464925.80	464959.60	464993.40	465027.20	465061.00
							465094.80

3725963.80	0.00229	0.00249	0.00270	0.00294	0.00321	0.00351	0.00385
0.00420	0.00452						
3725994.50	0.00243	0.00265	0.00290	0.00317	0.00348	0.00383	0.00423
0.00467	0.00509						
3726025.20	0.00257	0.00282	0.00311	0.00343	0.00379	0.00420	0.00467
0.00522	0.00577						
3726055.90	0.00271	0.00300	0.00333	0.00370	0.00413	0.00462	0.00519
0.00586	0.00659						
3726086.60	0.00285	0.00318	0.00356	0.00400	0.00451	0.00510	0.00579
0.00661	0.00758						
3726117.30	0.00300	0.00336	0.00379	0.00431	0.00492	0.00564	0.00649
0.00752	0.00879						
3726148.00	0.00316	0.00355	0.00403	0.00461	0.00534	0.00623	0.00731
0.00862	0.01028						
3726178.70	0.00332	0.00375	0.00428	0.00494	0.00577	0.00683	0.00820
0.00994	0.01216						
3726209.40	0.00345	0.00394	0.00454	0.00528	0.00623	0.00747	0.00914
0.01144	0.01458						
3726240.10	0.00353	0.00406	0.00473	0.00557	0.00667	0.00813	0.01014
0.01303	0.01746						
3726270.80	0.00358	0.00413	0.00483	0.00574	0.00695	0.00862	0.01103
0.01466	0.02059						
3726301.50	0.00360	0.00416	0.00487	0.00580	0.00706	0.00882	0.01142

0.01555	0.02290							
3726332.20		0.00360	0.00416	0.00488	0.00582	0.00709	0.00887	0.01151
0.01574	0.02335							
3726362.90		0.00361	0.00417	0.00489	0.00583	0.00709	0.00886	0.01146
0.01557	0.02303							
3726393.60		0.00360	0.00416	0.00486	0.00578	0.00699	0.00868	0.01116
0.01520	0.02284							
3726424.30		0.00357	0.00411	0.00478	0.00564	0.00680	0.00843	0.01093
0.01506	0.02227							
3726455.00		0.00350	0.00401	0.00465	0.00549	0.00664	0.00830	0.01082
0.01479	0.02042							
3726485.70		0.00341	0.00391	0.00454	0.00539	0.00656	0.00821	0.01064
0.01405	0.01759							
3726516.40		0.00334	0.00384	0.00448	0.00533	0.00648	0.00808	0.01028
0.01283	0.01456							
3726547.10		0.00329	0.00380	0.00444	0.00527	0.00638	0.00787	0.00968
0.01132	0.01190							
3726577.80		0.00326	0.00376	0.00438	0.00519	0.00625	0.00755	0.00889
0.00975	0.00976							
^ *** AERMOD - VERSION 19191 *** *** Benzene								***
05/01/20								
*** AERMET - VERSION 14134 *** ***								***
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 *** MODELOPTs: RegDEFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 2 YEARS FOR SOURCE GROUP: ALL

INCLUDING SOURCE(S): QYS54001 , QYS54004 , QYS54007 , QYS54008 ,

QYS54009 , QYS5400A , QYS5400B , QYS5400C , QYS5400D , QYS5400E , QYS5400F , QYS5400G ,

QYS5400H , QYS5400I , QYS5400J , QYS5400K , QYS54013 , QYS54014 , QYS54015 , QYS54016 ,

QYS54017 , QYS54018 , QYS54019 , QYS5401A , QYS5401B , QYS5401C , QYS5401D , QYS5401E ,

. . . ,

*** NETWORK ID: QYS5401Q ; NETWORK TYPE: GRIDCART ***

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

Y-COORD					X-COORD (METERS)		
(METERS)		465196.20	465230.00	465263.80	465297.60	465331.40	465365.20
465432.80	465466.60						465399.00

3725963.80		0.00473	0.00478	0.00490	0.00512	0.00523	0.00517	0.00506
0.00504	0.00506							
3725994.50		0.00540	0.00548	0.00563	0.00590	0.00600	0.00590	0.00580
0.00582	0.00576							
3726025.20		0.00621	0.00637	0.00656	0.00688	0.00697	0.00682	0.00677
0.00677	0.00652							
3726055.90		0.00723	0.00750	0.00775	0.00814	0.00819	0.00803	0.00802
0.00787	0.00729							
3726086.60		0.00851	0.00899	0.00933	0.00982	0.00981	0.00967	0.00962
0.00906	0.00801							
3726117.30		0.01015	0.01100	0.01150	0.01211	0.01202	0.01195	0.01152
0.01022	0.00861							
3726148.00		0.01229	0.01382	0.01462	0.01539	0.01527	0.01502	0.01351
0.01119	0.00908							
3726178.70		0.01512	0.01795	0.01938	0.02036	0.02023	0.01872	0.01527
0.01192	0.00943							
3726209.40		0.01894	0.02436	0.02735	0.02873	0.02754	0.02229	0.01651
0.01242	0.00968							
3726240.10		0.02433	0.03505	0.04275	0.04443	0.03618	0.02475	0.01721
0.01264	0.00969							
3726270.80		0.03156	0.05481	0.08287	0.07125	0.04235	0.02560	0.01723

0.01254	0.00964							
3726301.50		0.03872	0.09309	0.27436	0.09740	0.04299	0.02514	0.01698
0.01243	0.00958							
3726332.20		0.04036	0.10665	0.21968	0.09612	0.04183	0.02487	0.01685
0.01232	0.00948							
3726362.90		0.04041	0.08225	0.08778	0.05535	0.03682	0.02420	0.01692
0.01250	0.00964							
3726393.60		0.03822	0.05367	0.04338	0.03212	0.02606	0.02038	0.01551
0.01199	0.00949							
3726424.30		0.03198	0.03414	0.02715	0.02178	0.01839	0.01587	0.01324
0.01081	0.00887							
3726455.00		0.02468	0.02309	0.01902	0.01593	0.01392	0.01224	0.01088
0.00941	0.00801							
3726485.70		0.01865	0.01671	0.01424	0.01226	0.01100	0.00979	0.00885
0.00801	0.00710							
3726516.40		0.01430	0.01273	0.01116	0.00980	0.00893	0.00809	0.00734
0.00675	0.00618							
3726547.10		0.01126	0.01009	0.00903	0.00805	0.00740	0.00683	0.00623
0.00575	0.00535							
3726577.80		0.00909	0.00824	0.00749	0.00676	0.00624	0.00584	0.00538
0.00497	0.00464							

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*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL

*** *** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 2 YEARS FOR SOURCE GROUP: ALL

 INCLUDING SOURCE(S): QYS54001 , QYS54004 , QYS54007 , QYS54008 ,
 QYS54009 , QYS5400A , QYS5400B , QYS5400C , QYS5400D , QYS5400E , QYS5400F , QYS5400G ,
 QYS5400H , QYS5400I , QYS5400J , QYS5400K , QYS54013 , QYS54014 , QYS54015 , QYS54016 ,
 QYS54017 , QYS54018 , QYS54019 , QYS5401A , QYS5401B , QYS5401C , QYS5401D , QYS5401E ,
 . . . ,

*** NETWORK ID: QYS5401Q ; NETWORK TYPE: GRIDCART ***

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

Y-COORD (METERS)				X-COORD (METERS)
	465500.40	465534.20	465568.00	

3725963.80	0.00494	0.00465	0.00425	
3725994.50	0.00547	0.00501	0.00449	
3726025.20	0.00599	0.00533	0.00469	
3726055.90	0.00646	0.00561	0.00487	
3726086.60	0.00686	0.00584	0.00501	
3726117.30	0.00718	0.00604	0.00514	
3726148.00	0.00743	0.00620	0.00526	
3726178.70	0.00765	0.00633	0.00532	
3726209.40	0.00775	0.00634	0.00529	
3726240.10	0.00770	0.00630	0.00528	
3726270.80	0.00771	0.00634	0.00532	
3726301.50	0.00765	0.00627	0.00525	
3726332.20	0.00756	0.00619	0.00519	
3726362.90	0.00769	0.00629	0.00526	
3726393.60	0.00767	0.00633	0.00532	
3726424.30	0.00735	0.00617	0.00524	
3726455.00	0.00682	0.00585	0.00505	
3726485.70	0.00620	0.00542	0.00476	
3726516.40	0.00557	0.00497	0.00442	
3726547.10	0.00494	0.00452	0.00409	

3726577.80 | 0.00436 0.00406 0.00375
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*** AERMET - VERSION 14134 *** ***
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*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 2 YEARS FOR SOURCE GROUP: ALL

INCLUDING SOURCE(S): QYS54001 , QYS54004 , QYS54007 , QYS54008 ,
QYS54009 , QYS5400A , QYS5400B , QYS5400C , QYS5400D , QYS5400E , QYS5400F , QYS5400G ,
QYS5400H , QYS5400I , QYS5400J , QYS5400K , QYS54013 , QYS54014 , QYS54015 , QYS54016 ,
QYS54017 , QYS54018 , QYS54019 , QYS5401A , QYS5401B , QYS5401C , QYS5401D , QYS5401E ,
. . . ,

*** SENSITIVE DISCRETE RECEPTOR POINTS ***

** CONC OF OTHER			IN MICROGRAMS/M**3			**		
X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC			
465255.60	3726399.70	0.04233	465175.60	3726376.60	0.02786			
465123.70	3726308.00	0.01487	465161.20	3726157.40	0.01073			

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*** AERMET - VERSION 14134 *** ***
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*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 2 YEARS ***

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

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

ALL	1ST HIGHEST VALUE IS	0.27436 AT (465263.80, 3726301.50, 0.00, 0.00, 0.00)	GC
QYS5401Q	2ND HIGHEST VALUE IS	0.21968 AT (465263.80, 3726332.20, 0.00, 0.00, 0.00)	GC
QYS5401Q	3RD HIGHEST VALUE IS	0.10665 AT (465230.00, 3726332.20, 0.00, 0.00, 0.00)	GC
QYS5401Q	4TH HIGHEST VALUE IS	0.09740 AT (465297.60, 3726301.50, 0.00, 0.00, 0.00)	GC
QYS5401Q	5TH HIGHEST VALUE IS	0.09612 AT (465297.60, 3726332.20, 0.00, 0.00, 0.00)	GC
QYS5401Q	6TH HIGHEST VALUE IS	0.09309 AT (465230.00, 3726301.50, 0.00, 0.00, 0.00)	GC
QYS5401Q	7TH HIGHEST VALUE IS	0.08778 AT (465263.80, 3726362.90, 0.00, 0.00, 0.00)	GC
QYS5401Q	8TH HIGHEST VALUE IS	0.08287 AT (465263.80, 3726270.80, 0.00, 0.00, 0.00)	GC
QYS5401Q	9TH HIGHEST VALUE IS	0.08225 AT (465230.00, 3726362.90, 0.00, 0.00, 0.00)	GC

10TH HIGHEST VALUE IS 0.07125 AT (465297.60, 3726270.80, 0.00, 0.00, 0.00) GC
QYS5401Q

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

▲ *** AERMOD - VERSION 19191 *** *** Benzene ***
05/01/20
*** AERMET - VERSION 14134 *** ***
15:16:51

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*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL

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

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

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 1916 Informational Message(s)

A Total of 17544 Hours Were Processed

A Total of 4 Calm Hours Identified

A Total of 973 Missing Hours Identified (5.55 Percent)

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

***** WARNING MESSAGES *****
*** NONE ***

*** AERMOD Finishes Successfully ***

Air Quality Health Risk Calculations
R&L Gas Station HR STUDY - Receptor 1
Annual Concentration (µg/m3) **0.084**

Based on Risk Assessment Guidelines - Guidance
Manual for Preparation of Health Risk
Assessments - February 2015
Unit Risk Factors
(<https://oehha.ca.gov/media/CPFs042909.pdf>)

Duration (Years)	70					
Age of Person Exposed (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual)	0.084	0.084	0.084	0.084	0.084	0.084
Breathing Rate per agegroup BR/BW	361	1090	861	745	335	290
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	0.96
10 ⁻⁶ Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00002911	0.00008790	0.00006943	0.00006008	0.00002701	0.00002339
Exposure Duration (years)	70					
potency factor for Benzene (mg/kg-day)-1	0.01	0.01	0.01	0.01	0.01	0.01
Age Sensitivity Factor	10	10	3	3	1	1
ED	0.25	2	7	14	14	54
AT	70	70	70	70	70	70
FAH	0.85	0.85	0.72	0.72	0.73	0.73
Risk for Each Age Group	8.83728E-09	2.13466E-07	1.49971E-07	2.59532E-07	3.9441E-08	1.31694E-07
per million	0.0088	0.2135	0.1500	0.2595	0.0394	0.1317
Cancer Risk Per Million 9-years	0.372					
Cancer Risk Per Million 30-years	0.521					
Cancer Risk Per Million 70-years	0.614					

Air Quality Health Risk Calculations
R&L Gas Station HR STUDY - Receptor 2
Annual Concentration (µg/m3) **0.056**

Based on Risk Assessment Guidelines - Guidance
Manual for Preparation of Health Risk
Assessments - February 2015
Unit Risk Factors
(<https://oehha.ca.gov/media/CPFs042909.pdf>)

Duration (Years)	70					
Age of Person Exposed (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual)	0.056	0.056	0.056	0.056	0.056	0.056
Breathing Rate per agegroup BR/BW	361	1090	861	745	335	290
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	0.96
10 ⁻⁶ -6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00001941	0.00005860	0.00004629	0.00004005	0.00001801	0.00001559
Exposure Duration (years)	70					
potency factor for Benzene (mg/kg-day)-1	0.01	0.01	0.01	0.01	0.01	0.01
Age Sensitivity Factor	10	10	3	3	1	1
ED	0.25	2	7	14	14	54
AT	70	70	70	70	70	70
FAH	0.85	0.85	0.72	0.72	0.73	0.73
Risk for Each Age Group	5.89152E-09	1.4231E-07	9.99807E-08	1.73021E-07	2.6294E-08	8.77962E-08
per million	0.0059	0.1423	0.1000	0.1730	0.0263	0.0878
Cancer Risk Per Million 9-years	0.248					
Cancer Risk Per Million 30-years	0.348					
Cancer Risk Per Million 70-years	0.409					

Air Quality Health Risk Calculations
R&L Gas Station HR STUDY - Receptor 3
Annual Concentration (µg/m3) **0.03**

Based on Risk Assessment Guidelines - Guidance
Manual for Preparation of Health Risk
Assessments - February 2015
Unit Risk Factors
(<https://oehha.ca.gov/media/CPFs042909.pdf>)

Duration (Years)	70					
Age of Person Exposed (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual)	0.03	0.03	0.03	0.03	0.03	0.03
Breathing Rate per agegroup BR/BW	361	1090	861	745	335	290
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	0.96
10 ⁻⁶ -6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00001040	0.00003139	0.00002480	0.00002146	0.00000965	0.00000835
Exposure Duration (years)	70					
potency factor for Benzene (mg/kg-day)-1	0.01	0.01	0.01	0.01	0.01	0.01
Age Sensitivity Factor	10	10	3	3	1	1
ED	0.25	2	7	14	14	54
AT	70	70	70	70	70	70
FAH	0.85	0.85	0.72	0.72	0.73	0.73
Risk for Each Age Group	3.15617E-09	7.62377E-08	5.35611E-08	9.26899E-08	1.40861E-08	4.70337E-08
per million	0.0032	0.0762	0.0536	0.0927	0.0141	0.0470
Cancer Risk Per Million 9-years	0.133					
Cancer Risk Per Million 30-years	0.186					
Cancer Risk Per Million 70-years	0.219					

Air Quality Health Risk Calculations

ARCO HR STUDY - Receptor 4

Annual Concentration (µg/m3) **0.022**

Based on Risk Assessment Guidelines - Guidance
Manual for Preparation of Health Risk
Assessments - February 2015
Unit Risk Factors
(<https://oehha.ca.gov/media/CPFs042909.pdf>)

Duration (Years)	70					
Age of Person Exposed (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual)	0.022	0.022	0.022	0.022	0.022	0.022
Breathing Rate per agegroup BR/BW	361	1090	861	745	335	290
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	0.96
10 ⁻⁶ -6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00000762	0.00002302	0.00001818	0.00001573	0.00000708	0.00000612
Exposure Duration (years)	70					
potency factor for Benzene (mg/kg-day)-1	0.01	0.01	0.01	0.01	0.01	0.01
Age Sensitivity Factor	10	10	3	3	1	1
ED	0.25	2	7	14	14	54
AT	70	70	70	70	70	70
FAH	0.85	0.85	0.72	0.72	0.73	0.73
Risk for Each Age Group	2.31453E-09	5.59077E-08	3.92781E-08	6.79726E-08	1.03298E-08	3.44914E-08
per million	0.0023	0.0559	0.0393	0.0680	0.0103	0.0345
Cancer Risk Per Million 9-years	0.098					
Cancer Risk Per Million 30-years	0.137					
Cancer Risk Per Million 70-years	0.161					