

**REVIEW OF ESCONDIDO ASPHALT  
AB2588 HEALTH RISK ASSESSMENT (HRA)**

October 16, 2020

Emissions Inventory Facility ID: 10158 Toxics

Emissions Inventory Year: 2014

Review Conducted by: Michael Kehetian, SDAPCD

A Health Risk Assessment (HRA) was performed for Escondido Asphalt, 500 Tulip Street N, Escondido, CA 92025 by SESPE Consulting and submitted to the District for review on June 13, 2018 (Submittal HRA).

The following are the District's comments on the Submittal HRA and, in addition, the results of a Draft District Modified HRA. The HRA submitter may provide additional information that the District will consider in its review and final approval of the facility's HRA.

**Summary of HRA Risk Assessment Results:**

Cancer Point of Maximum Impact (PMI)	8.6 in one million
Cancer Maximum Exposed Individual Resident (MEIR)	1.12 in one million
Cancer Maximum Exposed Individual Worker (MEIW)	6.0 in one million
Chronic Noncancer Health Hazard Index (PMI)	1.79
Chronic Noncancer Health Hazard Index (MEIR)	0.022
Chronic Noncancer Health Hazard Index (MEIW)	0.32
8-Hour Noncancer Health Hazard Index (MEIW)	0.10
Acute Noncancer Health Hazard Index (PMI)	3.61
Acute Noncancer Health Hazard Index (MEIR)	0.15
Acute Noncancer Health Hazard Index (MEIW)	1.45
Population Excess Cancer Burden	0.04

The facility's sources include Asphalt Production, Open Storage Piles, and Onsite Haul Roads.

**REVIEW OF ESCONDIDO ASPHALT  
AB2588 HEALTH RISK ASSESSMENT (HRA)**

**Summary of Health Impacts by Pollutant:**

Cancer risk is due to Hexavalent Chromium (56%), Formaldehyde (15%), Arsenic (14%), Benzene (9%), and Naphthalene (3%).

The Chronic Health Hazard Index (HHI) is due to Arsenic (56%), Nickel (18%), Silica, Crystalline (17%), and Formaldehyde (8%).

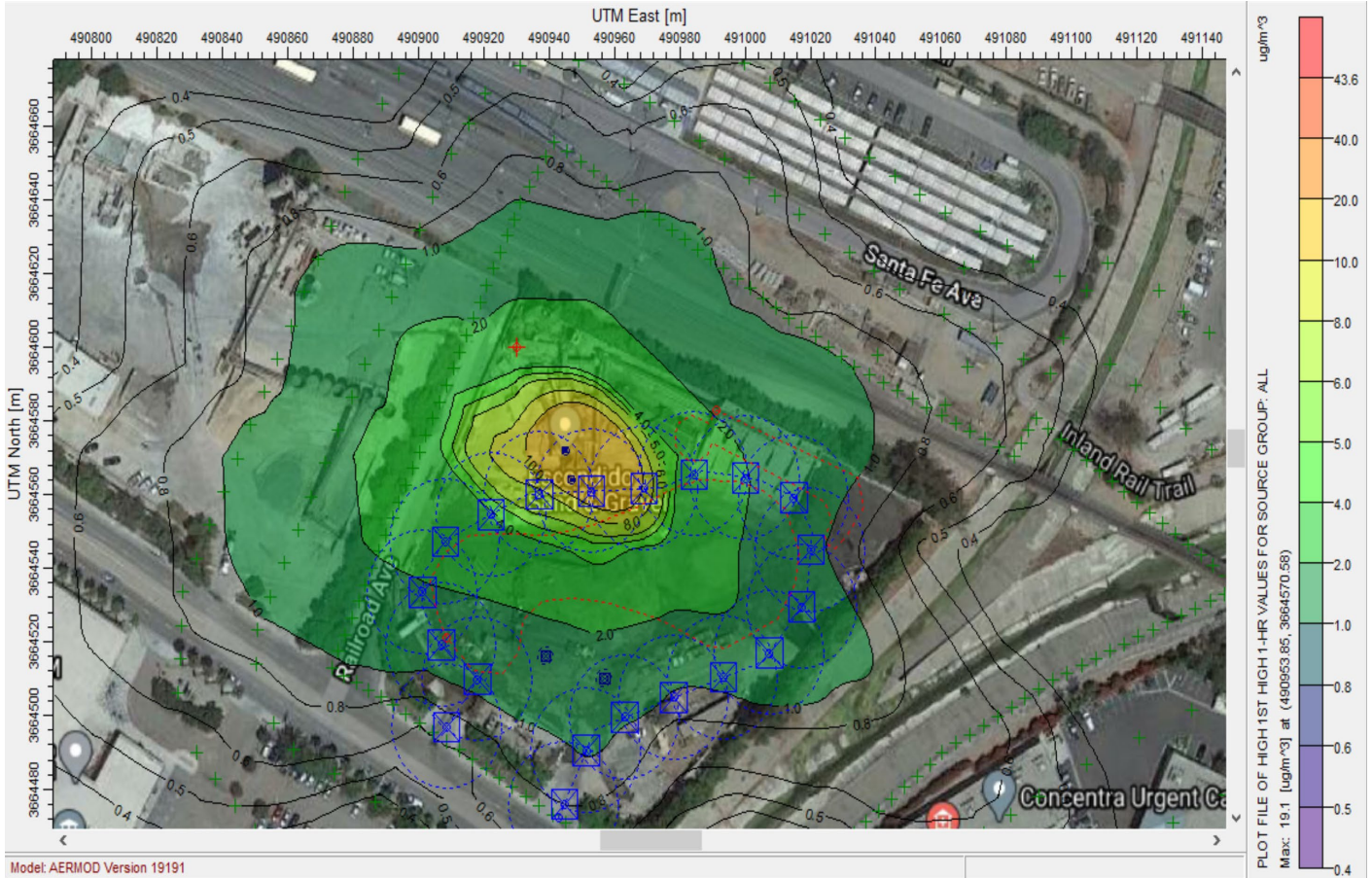
The Acute HHI is due to Nickel (96%) and Benzene (4%).

The Submittal HRA concludes that the noncancer acute HHI does exceed the public notification and reduction levels specified in District Rule 1210.

The District calculated the acute HHI and imported those results in Lakes AERMOD View resulting in an isopleth that slightly differs from Figure 3 of the Submittal HRA. Note that the Submittal HRA includes onsite receptors. Only the offsite receptors are considered as part of the HRA results.

# REVIEW OF ESCONDIDO ASPHALT AB2588 HEALTH RISK ASSESSMENT (HRA)

## Acute HHI > 1.0



### **Air Dispersion Modeling:**

AERMOD (Version 16216r) and AERMET (Version 16216) preprocessed Escondido 2010-2012 Ustar adjusted surface and profile meteorological data and urban dispersion coefficients were modelled. Need to justify

Hour of Day scalars were applied to account for 12 hours of operation per day, from 6am to 6pm.

### **Harp Risk Calculations:**

**Inhalation Rates:** The Submittal HRA calculated residential cancer risk using the Office of Environmental Health Hazard Assessment (OEHHA) Derived High End 95<sup>th</sup> percentile Daily Breathing Rate (DBR). In cancer risk assessments, the derived method

uses the high-end point estimate (i.e., 95<sup>th</sup> percentile) for the two driving (dominant) exposure pathways (e.g., soil and breast milk) and the mean (65<sup>th</sup> percentile) point estimate for the remaining pathways.

The District calculates residential cancer risk using the Air Resources Board (ARB) Risk Management Policy (RMP) for the daily breathing rate. For the residential 30-year exposure duration, the RMP daily breathing rate uses the 95<sup>th</sup> percentile DBR for age groups less than 2 years old (3<sup>rd</sup> trimester through age 2) and the 80<sup>th</sup> percentile DBR for age groups greater than 2 years old. The Submittal HRA used a more conservative DBR for the total 30-year exposure. Reference the Air Resources Board (ARB) Risk Management Guidance Document, July 2015.

**Noninhalation Pathways:** The cancer risk and chronic HHI calculations included the minimum oral exposure pathways (dermal contact, soil ingestion, and mother's milk for cancer residential exposure) referencing the OEHHA Guidance Manual, Criteria for Exposure Pathway Evaluation, Section 5.2, February 2015.

**Frequency of Time at Home:** Since there is no school within the one in one million residential cancer risk isopleth, the 3<sup>rd</sup> trimester to age 16 frequency of time at home (FAH) was applied.

**Worker Adjustment Factor:** The Submittal HRA did not apply a worker adjustment factor (WAF) in HARP to calculate occupational cancer risk since daily emission rate scalars were used in the modelling to adjust the 24-hour annual concentrations.

