

# **REVIEW OF HANSON AGGREGATES AB2588 HEALTH RISK ASSESSMENT (HRA)**

April 28, 2022

Emissions Inventory Facility ID: 77

Toxics Emissions Inventory Year: 2017

Review Conducted by: Stephen Amberg, SDAPCD

A Health Risk Assessment (HRA) was performed for Hanson Aggregates Pacific Southwest (Hanson), 9229 Harris Plant Road, San Diego, CA 92145 by Yorke Engineering, LLC. for emissions in calendar year 2017 and submitted to the District for review on July 6, 2021 (Submittal HRA). The District provided District's comments on the HRA along with comments provided from the Office of Environmental Health Hazard Assessment (OEHHA) to Hanson on September 30, 2021. Hanson submitted a revised HRA (Revised HRA) to the District on November 23, 2021. Subsequently, the District completed a modified health risk assessment (District Modified HRA) on April 28, 2022.

The following are the District's comments on the Revised HRA and, in addition, the results of the District Modified HRA.

## **Approved HRA Results**

Point of Maximum Impact (PMI) Cancer Risk	60.65
Maximum Exposed Individual Resident Cancer Risk	0.65
Maximum Exposed Individual Worker Cancer Risk	3.96
Maximum Non-Cancer Chronic Health Hazard Index (PMI)	5.16
Maximum Residential Non-Cancer Chronic Health Hazard Index	0.040
Maximum Worker Non-Cancer Chronic Health Hazard Index	2.58
Maximum Worker 8-Hour Non-Cancer Chronic Health Hazard Index	0.40
Maximum Acute Health Hazard Index (PMI)	0.25
Maximum Residential Acute Health Hazard Index	0.037
Maximum Worker Acute Health Hazard Index	0.25
Population Excess Cancer Burden	0
Sub-Chronic Lead Exposure Risk	<0.12 ug/m <sup>3</sup>

The 30-day lead concentration at the Maximum Offsite Concentration (MOC), using EPA's AERMOD model, is estimated to be 0.025 µg/m<sup>3</sup>, which is below the High Exposure Scenario approval level of 0.12 µg/m<sup>3</sup> in the ARB Risk Management Guidelines for Lead, 2001. Lead emissions were estimated based on annual emissions being emitted in a 30-day period.

### Major Pollutant and Source Contributions for Selected Risks

#### *Maximum Worker Non-Cancer Chronic Health Hazard Index*

<b>Pollutant</b>	<b>Contribution</b>
Arsenic	50%
Silica, crystalline	48%

<b>Source</b>	<b>Contribution</b>
Unpaved Aggregate Road	65%
Unpaved Concrete Plant Road	19%
Aggregate Plant	9%

The District Revised HRA concludes that the worker non-cancer chronic health hazard index exceeds the public notification levels specified in District Rule 1210.

### Summary of Changes in District Modified HRA

#### *Air Dispersion Modeling*

1. An area source was modeled for the aggregate stockpiles.
2. The volume source for the aggregate plant was made smaller and located where the equipment appeared to have operated in 2017 satellite imagery.
3. The Haul Roads were modeled as three (3) line volume sources. One for the paved portion of the roads and one each for the concrete plant and the aggregate plant unpaved portions.
4. Fenceline receptors were added near the entrance road and around the separate on-site businesses.

#### *Risk Assessment Calculations*

1. The homegrown produce pathway was not included in this analysis.
2. A deposition velocity of 0.02 m/s was used.

## Locations of Receptors at Maximum Exposure Points

<b>Receptor - Cancer Risk</b>	<b>Risk (1 in 1 million)</b>	<b>x (m)</b>	<b>y (m)</b>
Point of Maximum Impact Cancer Risk (PMI)	60.65	487935.68	3635876.64
Maximum Exposed Individual Resident Cancer Risk (MEIR)	0.65	484228.06	3633473.87
Maximum Exposed Individual Worker Cancer Risk (MEIW)	3.96	487763.14	3635649.08

<b>Receptor - Non-Cancer Chronic Health Hazard Index</b>	<b>Health Hazard Index</b>	<b>x (m)</b>	<b>y (m)</b>
Maximum Non-Cancer Chronic Health Hazard Index (PMI)	5.16	487935.68	3635876.64
Maximum Residential Non-Cancer Chronic Health Hazard Index (MEIR)	0.040	490125.96	3633470.60
Maximum Worker Non-Cancer Chronic Health Hazard Index (MEIW)	2.58	487763.14	3635649.08
Maximum Worker 8-Hour Non-Cancer Chronic Health Hazard Index (MEIW)	0.40	487763.14	3635649.08

<b>Receptor - Acute Health Hazard Index</b>	<b>Health Hazard Index</b>	<b>x (m)</b>	<b>y (m)</b>
Maximum Acute Health Hazard Index (PMI)	0.25	487748.94	3635663.44
Maximum Residential Acute Health Hazard Index (MEIR)	0.037	490062.00	3633307.00
Maximum Worker Acute Health Hazard Index (MEIW)	0.25	487748.94	3635663.44

The geographic coordinate system for the locations is the North American Datum of 1983.

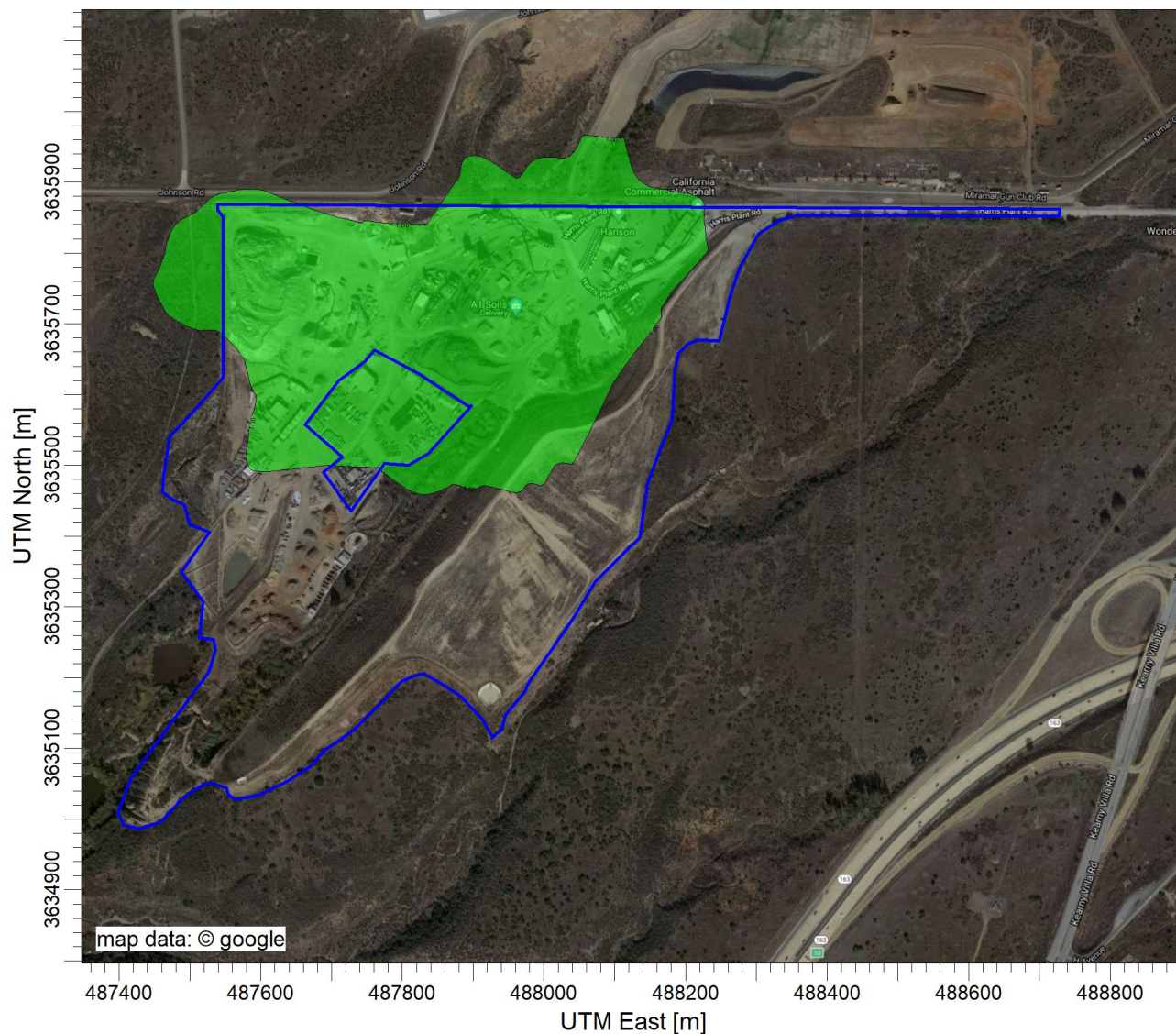
## Contours for Selected Risk and Health Hazard Index Calculations

Contours for selected risk and health hazard index calculations are on the following pages.

1. Worker Non-Cancer Chronic Health Hazard Index

PROJECT TITLE:

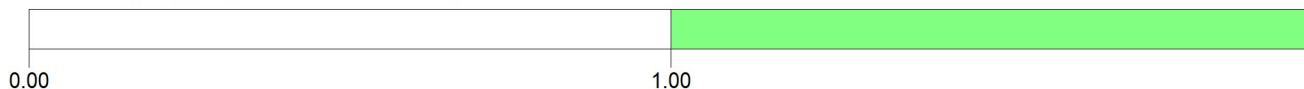
**Hanson Aggregates Pacific Southwest  
2017 HRA Occupational Non-Cancer Chronic HHI**



Occupational Non-Cancer Chronic Health Hazard Index Notification Isopleth

HHI

Max: 3.97 [HHI] at (487935.68, 3635876.64)



COMMENTS:

SOURCES:

**7**

RECEPTORS:

**1701**

OUTPUT TYPE:

**Concentration**

MAX:

**3.97 HHI**

SCALE:

1:9,799

0 0.3 km

PROJECT NO.: