**APPENDIX J**

**HEALTH RISK ASSESSMENT**

CEMEX CONSTRUCTION MATERIALS PACIFIC, LLC.
CACHE CREEK MINING PERMIT AND
RECLAMATION PLAN AMENDMENT PROJECT

# PUBLIC HEALTH RISK ASSESSMENT OF DIESEL PARTICULATE MATTER AND RESPIRABLE SILICA

PREPARED FOR:
CEMEX Construction Materials Pacific, LLC.
2365 Iron Point Road, Suite 120
Folsom, CA  95630

FOR SUBMITTAL TO:
Yolo County
Planning Division
292 West Beamer Street
Woodland, California 95695

COMPASS LAND
G R O U P

AUGUST 2022

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**APPENDICES**

# 1.0    INTRODUCTION

Compass Land Group ("Compass") has prepared this Public Health Risk Assessment of Diesel Particulate Matter and Respirable Silica ("HRA") in support of the CEMEX Construction Materials Pacific, LLC. ("CEMEX") Cache Creek Mining Permit and Reclamation Plan Amendment Project in unincorporated Yolo County, California ("Project").  This HRA evaluates the potential air quality related public health risks associated with the proposed Project's diesel particulate emissions and respirable silica.  Public health risks are compared against significance thresholds adopted by the Yolo-Solano Air Quality Management District ("YSAQMD").  This HRA is intended to support the lead agency's evaluation of air quality related public health impacts pursuant to the California Environmental Quality Act ("CEQA").

The sections that follow provide a description of the Project, scope of the risk assessment, YSAQMD significance thresholds, exposure assessment, and risk analysis for use in Project CEQA review.

## 1.1    Project Description

**Project Overview**

The Project proposes to modify Long-Term Off-Channel Mining Permit No. ZF #95-093, Reclamation Plan No. ZF #95-093 and Development Agreement No. 96-287 (as subsequently amended, "Existing Entitlements") with revised mining and reclamation plans and a 20-year time extension.  The Project would allow mining and associated processing plant operations to continue into year 2047.

The Project is an extension and modification of an approved project.  CEMEX proposes no change to any fundamental element of the existing operation (e.g., mining methods, maximum depth of mining, processing operations, use of settling ponds to contain and settle aggregate wash fines, water use, truck routes, or hours of operation).

Surface mining is proposed to continue on 485± acres and reclamation is proposed to occur on 837± acres of the 1,902± acre property to a maximum depth of 70 feet below ground surface. The mine is planned to be further developed and ultimately reclaimed in six phases, the first two of which have already been mined.[1]  Consistent with Existing Entitlements, all of the proposed mining areas are located outside the active channel of Cache Creek.

**Project Activities Associated with Public Health Risks**

The Project will involve the continuation of stripping, mining, concurrent reclamation, and ancillary aggregate, ready-mix concrete, and recycle processing operations.  Each of these activities has the potential to emit fugitive dust and diesel exhaust from off-road equipment and/or engines.  Exposure to diesel exhaust and fugitive dust can lead to various health impacts.

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[1] The existing permit approvals include seven mining phases.  However, on June 3, 2022, CEMEX submitted an application addendum that included a request to eliminate Phase 7 from the Project.

Specifically, the following three types of public health impacts are commonly associated with exposure to fugitive dust and diesel particulate matter:

1. Cancer risk (reported as a probability)
2. Acute non-cancer risk (reported as a hazard index)
3. Chronic non-cancer risk (reported as a hazard index)

These potential health impacts are more thoroughly described in Section 1.3, below. The objective of this HRA is to determine whether the Project is likely to expose nearby residents or workers to significant health risks that exceed applicable thresholds. The criteria used to determine if health risks are significant is discussed in Section 2.0, below. However, to put this analysis into proper context, the health risks discussed in this HRA are not new as the Project represents an extension of time for an existing, fully permitted and operating mining and processing facility.

## 1.2    Scope of the Risk Assessment

The preparation of health risk assessments is a three-step process. The first step is to identify the potential contaminants that may contribute to public health risks. The second step is to assess the amount of contaminants that may reach the public (exposure assessment). The third and last step is to calculate the magnitude of the health risk as a result of exposure to harmful contaminants on the basis of the toxicology of the contaminants.

To support environmental review pursuant to CEQA, the County has specifically requested that CEMEX provide an assessment of health risks associated with diesel particulate matter and respirable silica.

The modeling parameters used in this study are described in Section 4.0 below.

## 1.3    Toxic Air Contaminants and Fine Particulate Matter

The following discussion of toxic air contaminants and fine particulate matter is sourced from the U.S. Occupational Safety and Health Administration ("OSHA") and May 2017 *California Environmental Quality Act Air Quality Guidelines* issued by BAAQMD ("BAAQMD CEQA Guidelines") to provide information and background on the primary constituents contributing to the Project health risks that are evaluated in this report.[2]

### 1.3.1  Toxic Air Contaminants

Toxic air contaminants ("TACs") are a defined set of airborne pollutants that may pose a present or potential hazard to human health. A wide range of sources, from industrial plants to motor

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[2] The BAAQMD CEQA Guidelines were published in 2017 and are more up-to-date than the YSAQMD CEQA Guidelines published in 2007, which is why they are referenced simply for purposes of describing toxic air contaminants and fine particulate matter.

vehicles, emit TACs. TACs can be emitted directly and can also be formed in the atmosphere through reactions among different pollutants.  This report will focus on direct TAC emissions that would be associated with Project activities, not those formed in the atmosphere.

The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis or genetic damage; or short-term acute affects such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches. For evaluation purposes, TACs are separated into carcinogens and non-carcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure. Non-carcinogenic substances differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis. Acute and chronic exposure to non-carcinogens is expressed as a hazard index ("HI"), which is the ratio of expected exposure levels to an acceptable reference exposure level.

TACs are primarily regulated through State and local risk management programs. These programs are designed to eliminate, avoid, or minimize the risk of adverse health effects from exposures to TACs. A chemical becomes a regulated TAC in California based on designation by the Office of Environmental Health Hazard Assessment ("OEHHA"). As part of its jurisdiction under the Air Toxics Hot Spots Program (Health and Safety Code Section 44360(b)(2)), OEHHA derives cancer potencies and reference exposure levels ("RELs") for individual air contaminants based on the current scientific knowledge that includes consideration of possible differential effects on the health of infants, children and other sensitive subpopulations, in accordance with California Health and Safety Code Sections 39669.5 et seq.

### 1.3.2  Fine Particulate Matter

$PM_{2.5}$ is a fine particulate matter with a diameter equal to or less than 2.5 micrometers.  $PM_{2.5}$ is a complex mixture of substances that includes elements such as carbon and metals; compounds such as nitrates, organics, and sulfates; and complex mixtures such as diesel exhaust and wood smoke. $PM_{2.5}$ can be emitted directly and can also be formed in the atmosphere through reactions among different pollutants.  This report will focus on direct $PM_{2.5}$ emissions that would be associated with Project activities, not those formed in the atmosphere.

A large body of scientific evidence indicates that both long-term and short-term exposure to $PM_{2.5}$ can cause a wide range of health effects (e.g., aggravating asthma and bronchitis, causing visits to the hospital for respiratory and cardio-vascular symptoms, and contributing to heart attacks and deaths).

### 1.3.3 Respirable Silica

Crystalline silica is a common mineral found in the earth's crust. Materials like sand, stone, concrete, and mortar contain crystalline silica. It is also used to make products such as glass, pottery, ceramics, bricks, and artificial stone. Respirable crystalline silica – very small particles at least 100 times smaller than ordinary sand you might find on beaches and playgrounds – is created when cutting, sawing, grinding, drilling, and crushing stone, rock, concrete, brick, block, and mortar. (OSHA 2022). The Project activities would have the potential to release and expose nearby workers to silica dust.

From a health risk perspective, the respirable fraction of silica is of principle concern. Workers who inhale these very small crystalline silica particles are at increased risk of developing serious silica-related diseases, including silicosis (an incurable lung disease that can lead to disability and death), lung cancer, chronic obstructive pulmonary disease (COPD), and kidney disease. (Ibid.) Due to the health risks posed by silica dust, OSHA has established work exposure standards that apply to construction and industry.

## 1.4    Report Organization

This report is divided into seven sections along with supporting figures and appendices. Following this introduction, Section 2.0 describes the applicable significance criteria that the lead agency may use for the evaluation of Project health risks pursuant to CEQA. Section 3.0 discusses the emissions and soil constituents associated with the Project. Section 4.0 describes the methods used for the exposure assessment, including the data and tools used to determine the dispersion pattern of emissions from the Project. This analysis considers the location of nearby homes, local wind patterns and topography. Section 5.0 describes the results of the Project risk assessment. Section 6.0 summarizes the results and the risk assessment findings relative to applicable thresholds of significance. Section 7.0 provides technical references. Technical data and calculations are provided in figures and appendices.

## 2.0    SIGNIFICANCE CRITERIA

This section describes the criteria that are used in this report to assess the significance of public health risks. These criteria are based on YSAQMD's *Handbook for Assessing and Mitigating Air Quality Impacts* (July 11, 2007) ("YSAQMD Handbook"). The YSAQMD Handbook states that proposed development projects that have the potential to expose the public to TACs from *stationary sources* in excess of the following thresholds would be considered to have a significant air quality impact:

- Probability of contracting cancer for the Maximally Exposed Individual (MEI) equals to 10 in one million or more.

- Ground-level concentrations of non-carcinogenic toxic air contaminants would result in a Hazard Index equal to 1 for the MEI or greater.

Regarding TACs, the Project does not propose any new stationary sources or any increase in permitted production levels for the existing stationary sources. CEMEX would continue to operate the facility in accordance with OSHA regulations and its existing Permits to Operate for stationary sources issued by the YSAQMD.

## 3.0    EMISSIONS SUMMARY

Project activities would release TACs, including diesel particulate matter ("DPM") and fugitive dust containing respirable silica.

A summary of emissions is presented in Appendix A, Modeling Emissions Inputs. DPM emissions are based on the number, type and duration of usage of off-road equipment and engines. Table 1 in Appendix A presents a breakdown of DPM by year and annual average DPM emissions. These emissions were sourced from the Project *Air and Greenhouse Gas Emissions Study* (Compass, July 2022). Complete methods for emissions estimating are described in that study. Compass' *Air and Greenhouse Gas Emissions Study* was peer-reviewed in July 2022 by Baseline Environmental Consulting on behalf of the County and determined to be acceptable for use in the CEQA process.

Project $PM_{10}$ emission rates were used to quantify annual and hourly emission rates of respirable silica. These calculations are provided in Tables 2 of Appendix A. The emission factor for respirable silica used in this study is based on a frequently cited aggregate industry study titled, *PM4 Crystalline Silica Emission Factors and Ambient Concentrations at Aggregate-Producing Sources in California* (Richards et al., November 2009), published in the Journal of the Air & Waste Management Association, Vol. 59.[3] Respirable silica emissions are conservatively calculated by multiplying $PM_{10}$ emission rates by the emission factor derived from the highest silica fraction value from the study's findings. Even so, the health risks associated with respirable silica will only represent a small fraction of the total Project health risk after accounting for DPM.

## 4.0    METHODS FOR EVALUATING EXPOSURE

Exposure assessment involves translating the emission rate (e.g., lbs/hr) of individual TACs (presented in Tables 1 and 2 of Appendix A) into a concentration (e.g., grams/cubic meter or parts per million) of each TAC. The key step in performing an exposure assessment is the application of an air dispersion model. In general, air dispersion modeling of pollutant emissions is used to estimate ground level concentrations at downwind receptors, which are distributed in a grid pattern of sufficient size and density to capture the maximum concentration. The dispersion model incorporates the local meteorological data (wind speed, wind direction, local temperature,

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[3] This study is frequently cited by aggregate industry air modelers and the San Joaquin Valley Air Pollution Control District in assessments of respirable silica emissions at aggregate facilities. The study investigated respirable silica emissions at three aggregate facilities in California (Barstow, Caroll Canyon, and Vernalis) and found that the $PM_4$ crystalline silica emissions ranged from 3.21% to 7.95% of the simultaneously measured $PM_{10}$ emission factors. The average of these values was 5.58%; however, the San Joaquin Air Pollution Control District recommends using 6.38% of the $PM_{10}$ emission rate for aggregate industry air studies based on the findings at the Vernalis plant. This HRA conservatively uses a higher value of 8%.

inversion heights, etc.), emissions release height, and terrain characteristics into the concentration of individual air contaminant.

Dispersion modeling was performed using the latest version of AERMOD View (version 10.2.1), developed by Lakes Software. AERMOD is a steady-state plume model that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain. AERMOD, like most dispersion models, uses mathematical formulations to characterize the atmospheric processes that disperse pollutants emitted by a source. Using source emission rates, exhaust parameters, terrain characteristics, and meteorological inputs, AERMOD calculates down-wind pollutant concentrations at specified receptor locations. AERMOD is recommended by both the U.S. EPA and YSAQMD for stationary source air dispersion modeling.

## 4.1    Model Setup and Options

The AERMOD dispersion model was employed for the exposure assessment. Model selection parameters are summarized in Table 1, below.

## 4.2    Modeling Grid

Based on input from YSAQMD[4], the modeling grid used to report the Project's distribution of health risk covers an area 7,500 meters x 7,500 meters with a 100-meter spacing, for a total of 5,625 receptors (see Figure 2, Modeling Grid). Fenceline receptors were added at the mine and plant boundary with 50-meter spacing, providing higher resolution of modeling outputs at the boundaries of the site, for an additional 414 receptors. Two discrete receptors were also located at nearby schools (Madison Community High School) and the Madison Migrant Child Development Center. Although protection of these sensitive receptors is already incorporated into OEHHA's risk assessment methodology for both cancer risk and noncancer risk assessment, the assessment of risk at these specific location may be useful to assure the public that such individuals have been considered in the analysis.

## 4.3    Meteorological Data

The Project site is located in a region characterized primarily by continuous agricultural lands within a broad, alluvial valley surrounded by distant rolling hills. The terrain at the site is relatively flat with surface elevations varying from approximately 149 feet above mean sea level (ft msl) at the west end of the property to 127 ft msl at the east end of the property. Mine excavations extend below groundwater in some areas to a maximum depth of 70 feet below ground surface.

Per input from YSAQMD, five years of surface and upper air meteorological data from the Sacramento International Airport (WBAN: ID 93225) for the period 2014-2018 were used in the exposure assessment. Figure 3, Windrose Plot, shows the overall wind patterns based on the five years of hourly wind data. This figure shows that the winds are predominantly from the south

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[4] Personal communications with Kyle Rohlfing, YSAMQD, on 7/28/2022.

and northwest with an average annual speed of 7.1 knots.  Calm winds occur approximately 1% of the time.

<div align="center">

**TABLE 1**
**MODEL SELECTION AND PARAMETERS**

</div>

| Category | Selection / Parameter | Notes |
|---|---|---|
| Model Selection | AERMOD View ver. 10.2.1 | YSAQMD-approved , industry standard. |
| Pollutants Modeled | 1. Diesel particulate matter (DPM) <br> 2. Respirable silica | Annual and 1-Hour concentrations were calculated at each receptor. |
| Control Pathway | 1. Regulatory default options used <br> 2. Averaging time options: 1-hour and Period <br> 3. Terrain selection: elevated. | YSAQMD-approved, industry standard.  Elevated terrain is used to ensure maximum model functionality. |
| Source Pathway | 1. Diesel fueled equipment and fugitive dust emissions from mining and processing operations. <br> 2. Emissions are modeled as elevated (5-meter height) polygonal area sources, by source group. <br> 3. For TACs, a unit emission rate (1 gram/sec) is assigned to each of the area sources.  Scaling of emissions for purposes of calculating health risks is done in the HARP model. | Emission rates of DPM  and fugitive dust were sourced from the Project Air and Greenhouse Gas Emissions Study (Compass July 2022). |
| Receptor Pathway / Modeling Grid | 1. Uniform cartesian grid: 7,500 meters x 7,500 meters with a 100-meter spacing. <br> 2. Fenceline receptors established with 50-meter spacing. <br> 3. Sensitive receptors include nearby residences, school, and child development center. | See Figure 2. <br><br> Total of 5,625 cartesian grid receptors, 414 fenceline (boundary) receptors, and 2 discrete sensitive receptors. |
| Meteorological Pathway | 1. 5 years of surface and upper air data for the period 2014 to 2018 from the Sacramento International Airport. | Utilized per YSAQMD input. |

## 5.0    RISK ANALYSIS

Health risks from public exposure to various TACs are discussed in this section.  The emission rates of various TACs referenced in Section 3.0 are used as a basis to quantify various health risks. The Hotspots Analysis and Reporting Program Air Dispersion Modeling and Risk Tool ("HARP2"), dated May 1, 2019, developed by the CARB and OEHHA[5], was used to calculate Project health risks.  As described in Section 1.0, three types of health risks were calculated (cancer, chronic non-cancer and acute non-cancer).

## 5.1    Project Risk Analysis

The Project's health risks were evaluated using the HARP2 risk model using the OEHHA Derived calculation method. Residential cancer risk is based on a 30-year exposure and worker cancer risk is based on a 25-year exposure.  For cancer and chronic risks, the minimum mandatory exposure pathways (i.e., inhalation, soil, dermal, and mother's milk) were used.  For acute risks, the inhalation pathway was used.

The spatial distribution of residential cancer risk is shown on Figure 4, Spatial Distribution of Residential Cancer Risk.  The Project's incremental maximum residential cancer risk is estimated to be 8.1 cancers per million.  This risk level is observed at a residence located south of the Project site, along Hwy. 16.  (see Figure 5, Location of Maximum Residential Cancer Risk).  The Project's incremental cancer risks at the Madison Community High School and Migrant Child Development Center are estimated to be 2.9 and 4.4 cancers per million, respectively.

The spatial distribution of worker cancer risk is shown on Figure 6, Spatial Distribution of Worker Cancer Risk.  The Project's incremental maximum worker cancer risk at nearby businesses is estimated to be 0.6 cancers per million.  The highest off-site worker risk appears to occur at an un-named agricultural business located south of the Project site but north of Hwy. 16 (see Figure 6).

The non-cancer risks at nearby homes and businesses are calculated in terms of a hazard index ("HI").  The maximum chronic hazard index is estimated to be 0.01 at the residence located south of the Project site, along Hwy. 16 (i.e., the residence with the highest observed cancer risk).   The acute hazard index was 0.00 for all receptors.  Given the low values for chronic and acute hazards, a meaningful contour map could not be generated to provide a spatial distribution of the hazard indices.

The risks for residential and worker locations are summarized in Table 2 in Section 6, below. Excerpts of the HARP2 model inputs are included in Appendix B.  HARP model risk table excerpts showing the calculated health risks (including cancer risk and hazard indices) are provided in Appendix C.

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[5] OEHHA Hotspots Analysis and Reporting Program (HARP) available at:
https://ww3.arb.ca.gov/toxics/harp/harp.htm

# 6.0 RESULTS AND CONCLUSIONS

Table 2 below summarizes the Project health risks in comparison to YSAQMD significance thresholds. The Project's potential health risk impact in terms of excess cancer risk and non-cancer hazards is **less than significant**.

**TABLE 2**
**SUMMARY OF PROJECT HEALTH RISKS**

| Risk Metric | Maximum Off-Site Value | Significance Threshold | Significant? |
|---|---|---|---|
| Residential Cancer Risk per Million (30-year exposure) | 8.1 at private residence south of Project site along Hwy. 16 | 10 | No |
| Worker Cancer Risk (25-year exposure) | 0.6 at private agricultural business north of Hwy 16 | 10 | No |
| Cancer Risk per Million at Discrete Sensitive Receptors | 2.9 at Madison Community High School<br><br>4.4 at Madison Migrant Child Development Center | 10 | No |
| Chronic Hazard Index | Residential 0.01<br>Worker 0.02 | 1.0 | No |
| Acute Hazard Index | Residential 0.00<br>Worker 0.00 | 1.0 | No |

The risk assessment process contains numerous, conservative assumptions to ensure that public health risks are not underestimated. These assumptions are related to the exposure duration, toxicity data and use of Gaussian type statistical atmospheric dispersion models. For example, it is unlikely that any individual would remain in the same location for 30 years. Moreover, with respect to Project emissions modeling:

- The Project only involves a 20-year extension.

- Zero adjustment has been made to subtract emissions from existing, baseline mining and processing operations.

- The Project air study and this HRA assume that CEMEX will operate at maximum mining and processing production levels for every year during the life of the permit, which is very unlikely. Accordingly, the emissions models likely over-estimate DPM and respirable silica emissions.

- Off-road equipment and/or engines used in the mining process will be upgraded over time with newer engines based on CARB fleet requirements that will generally emit less DPM

into the atmosphere.  In turn, the Project's DPM emissions are expected to gradually decrease over time whereas the Project air study and this HRA assume that emissions will continue at 2022 levels for the duration of the Project.

As a result, the modeling assumptions may overstate the Project's contribution and the public's exposure to health risks.

# 7.0   REFERENCES

BAAQMD (2017).  California Environmental Quality Act Air Quality Guidelines.  May 2017.

CalEPA (2012). Technical Support Document for Exposure Assessment and Stochastic Analysis. Office of Environmental Health Hazard Assessment. California Environmental Protection Agency.  August 2012.

CARB (2003).  HARP User's Guide. Available at: http://www.arb.ca.gov/toxics/harp/harp.htm. December 2003.

Compass Land Group (2022).  Air and Greenhouse Gas Emissions Study.  July 2022.

EPA (2004).  User's Guide for the AMS/EPA Regulatory Model – AERMOD.  EPA Document No. EPA=454/B-03-001. September 2004.

OEHHA (2014). Consolidated Table of Approved health Risk Values.  Cal EPA, Office of Environmental Health Hazard Assessment. July 3, 2014.

Richards et al. (2009).  PM4 Crystalline Silica Emission Factors and Ambient Concentrations at Aggregate-Producing Sources in California.  Journal of the Air & Waste Management Association, Vol. 59.  November 2009.

Yolo-Solano Air Quality Management District (2007).  Handbook for Assessing and Mitigating Air Quality Impacts.  July 2007.

Cache Creek

Plant Site

Mining Area

I-505

Esparto

Madison

Woodland

I-505

I-5

16

Aerial photo adapted from Google Earth Maps Imagery Date 10/21/2020.
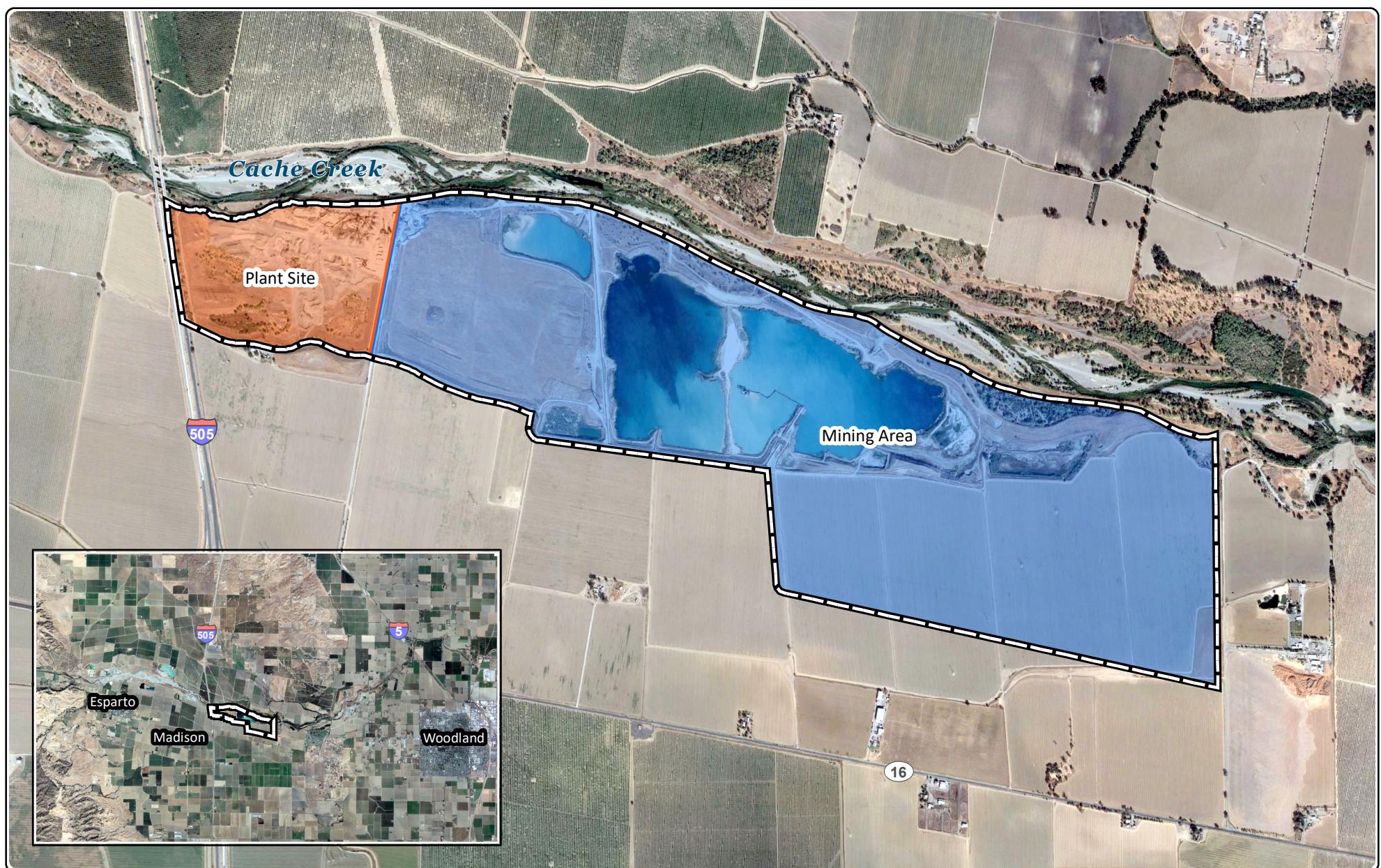
Legend:

▭ Rec Plan Boundary
▭ Mine Area Source
▭ Plant Area Source

0   800   1,600   3,200 Feet

N

Project Location and Site Map
Cache Creek
CEMEX Construction Materials Pacific
Yolo County, California

Figure 1

8/24/2022

*Disclaimer: The data was mapped for planning purposes only. No liability is assumed for accuracy of the data shown.*

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Aerial photo adapted from Google Earth Maps Imagery Date 10/21/2020.

Esparto

Cache Creek

505

19

Madison

16

94B

Watts-Woodland Airport

To Woodland
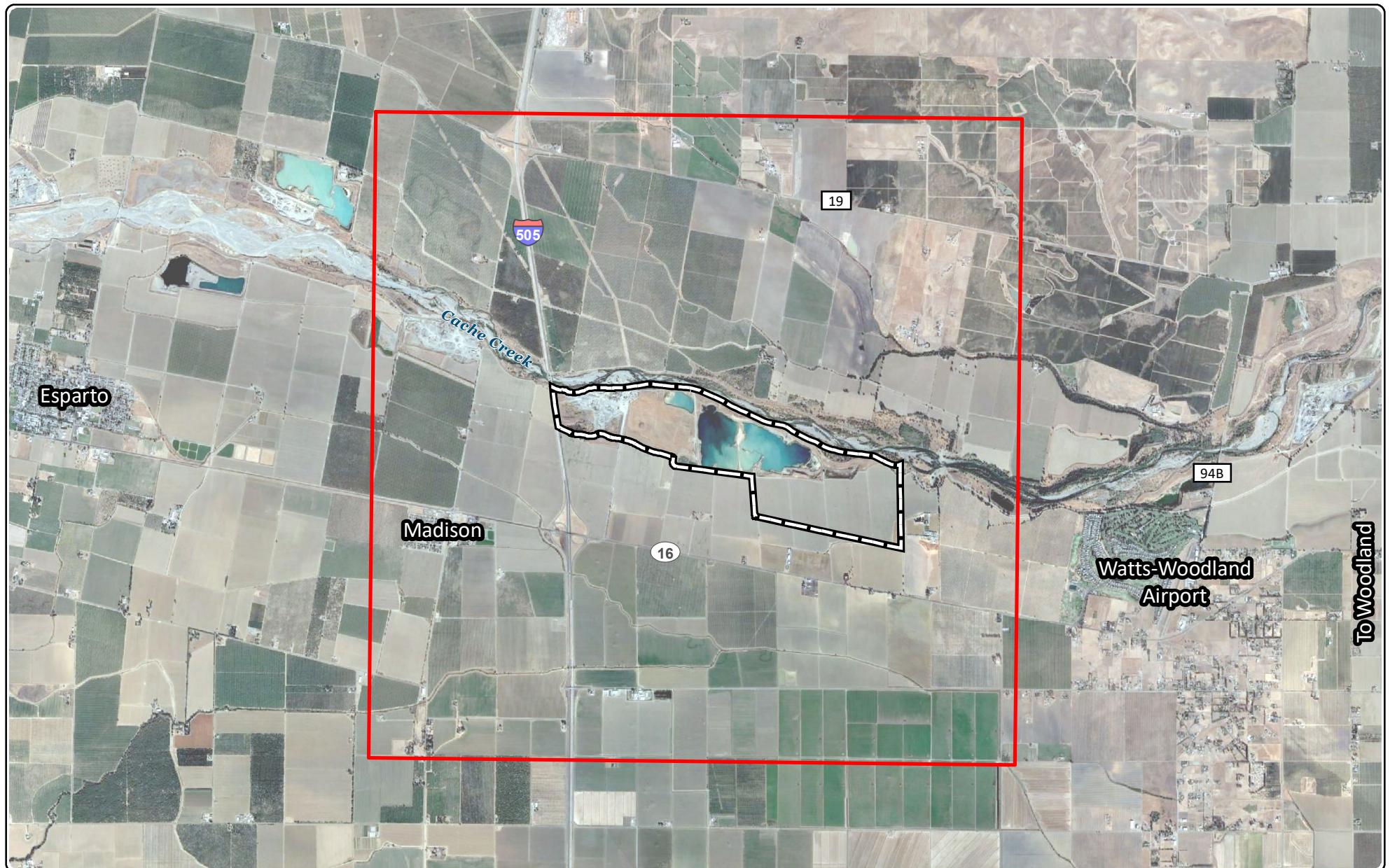
**Legend:**

▢ Rec Plan Boundary

▢ Modeling Grid

| Modeling Grid Cache Creek CEMEX Construction Materials Pacific Yolo County, California | Figure 2 | 8/24/2022 |

*Disclaimer: The data was mapped for planning purposes only. No liability is assumed for accuracy of the data shown.*

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0    0.5    1              2 Miles

N

WIND SPEED
(Knots)

- >= 21.58
- 17.11 - 21.58
- 11.08 - 17.11
- 7.00 - 11.08
- 4.08 - 7.00
- 0.97 - 4.08

Calms: 1.03%
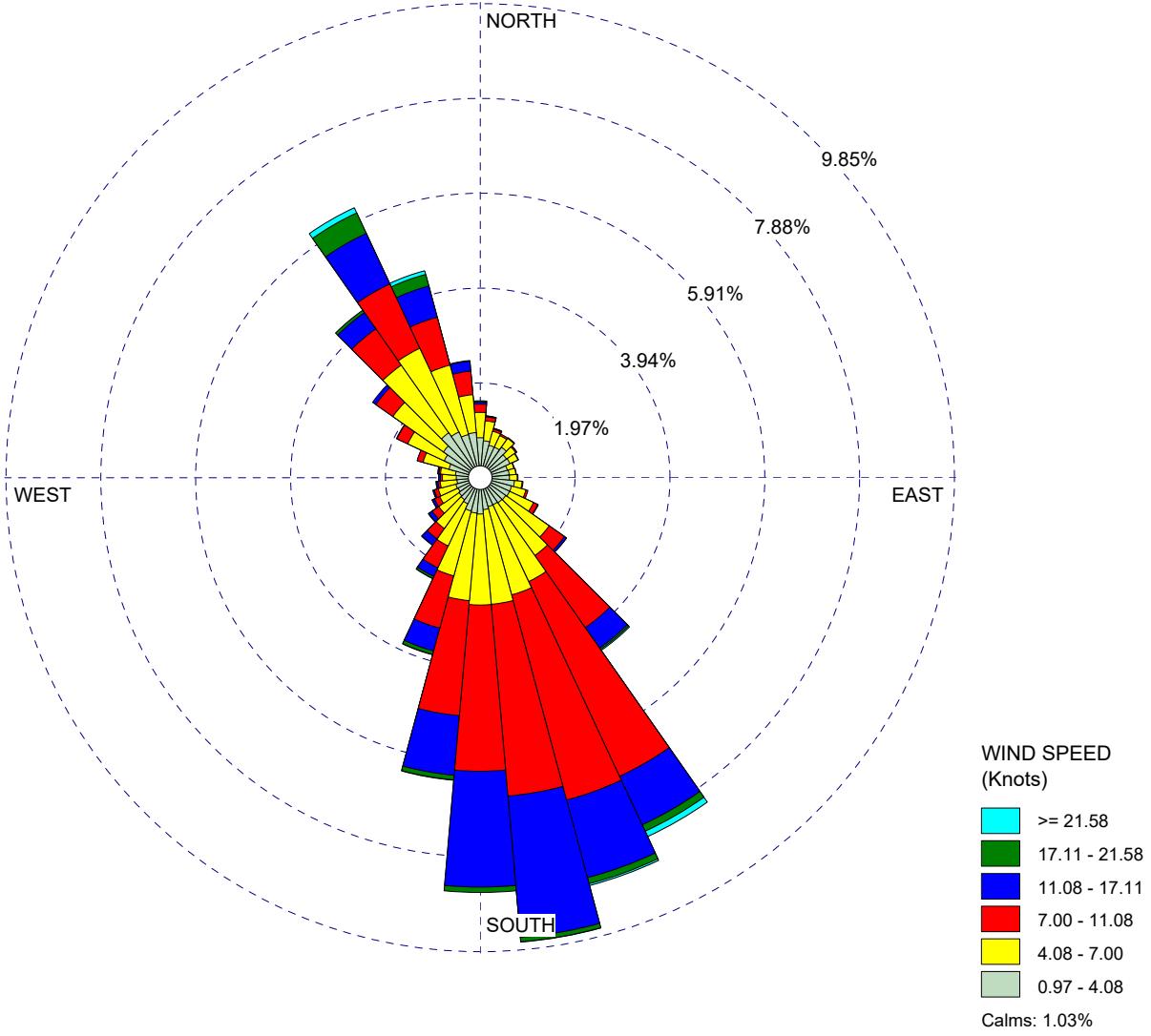
Windrose Plot
Cache Creek
CEMEX Construction Materials Pacific
Yolo County, California

Figure 3

8/24/2022

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Residence RecID4289
Cancer Risk: 6.9

Residence RecID3495
Cancer Risk: 6.8

Residence
RecID2787
Cancer Risk: 5.7

Madison Migrant Child
Development Center

Madison

Madison Community
High School

Residence RecID2164
Cancer Risk: 4.1

Maximum Residential
Cancer Risk
Residence RecID1768
Cancer Risk: 8.1

Residence RecID1558
Cancer Risk: 5.7

Residence
RecID2038
Cancer Risk: 4.4

Aerial photo adapted from Google Earth Maps Imagery Date 10/21/2020.

Legend:

▢ Rec Plan Boundary

—— Equal or Less than 8.0 per million

—— 10.0 per million

0    1,200    2,400    4,800 Feet

N
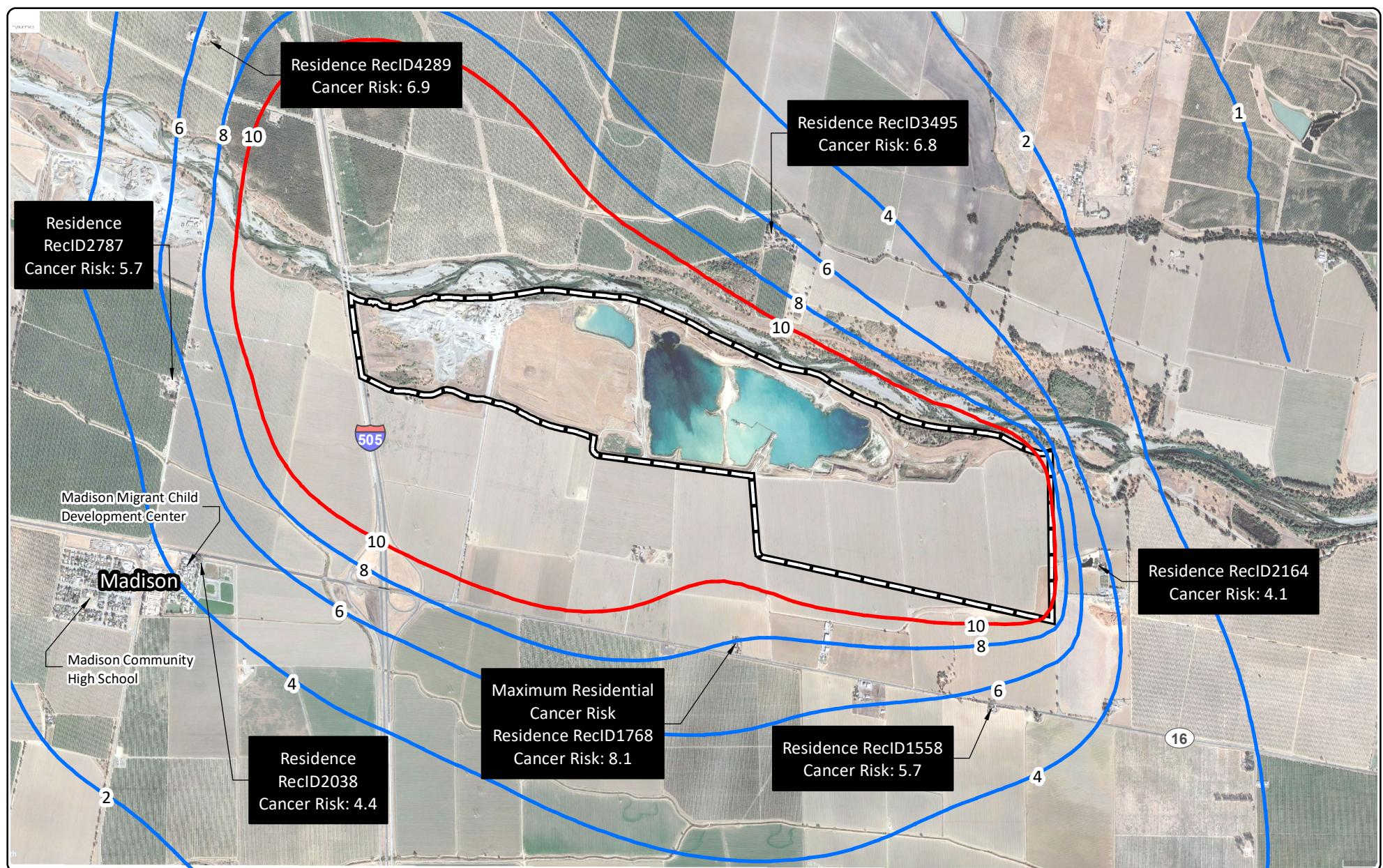
**Spatial Distribution of Residential Cancer Risk**
**Cache Creek**
**CEMEX Construction Materials Pacific**
**Yolo County, California**

Figure 4        8/26/2022

*Disclaimer: The data was mapped for planning purposes only. No liability is assumed for accuracy of the data shown.*

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Aerial photo adapted from Google Earth Maps Imagery Date 10/21/2020.
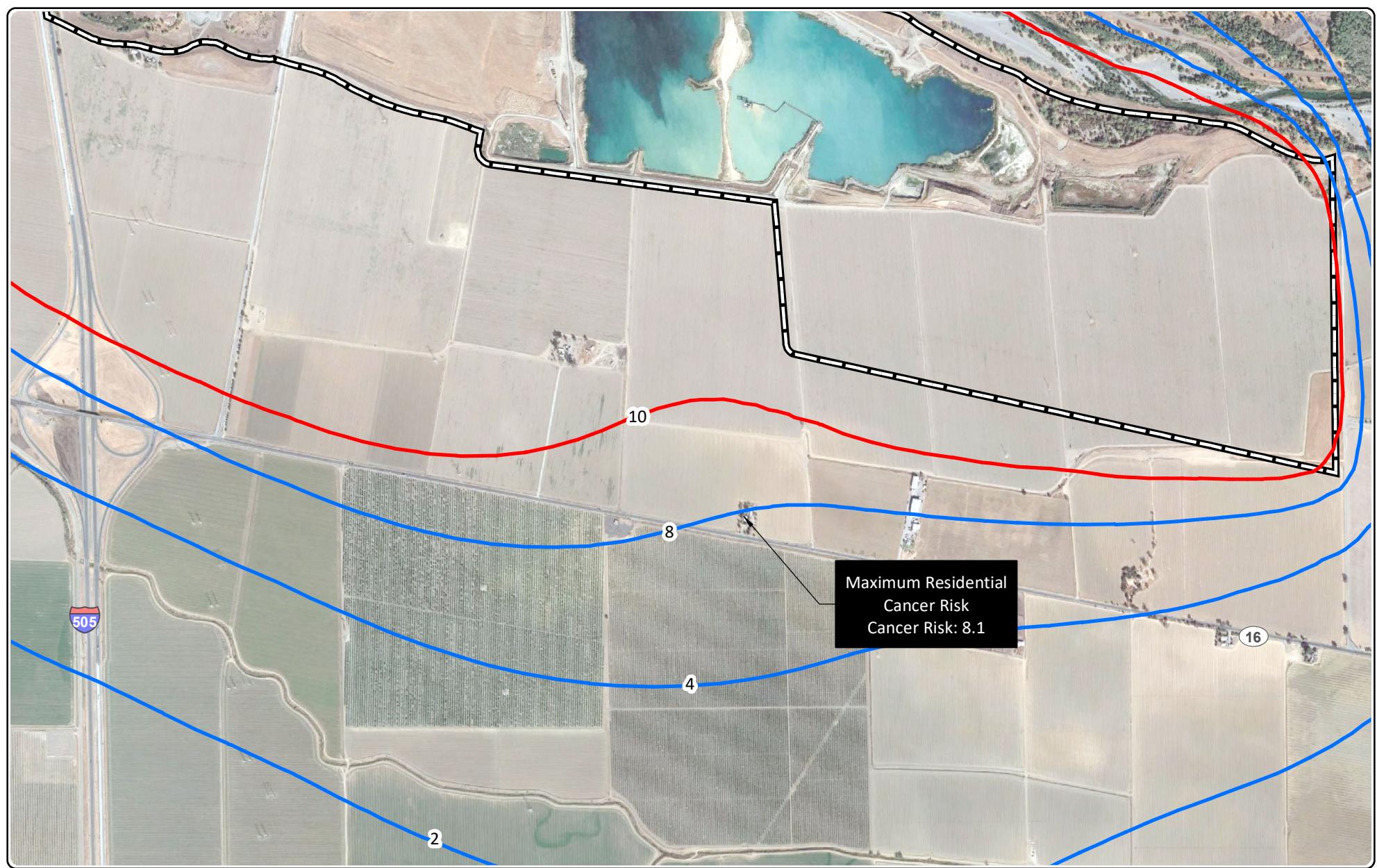
**Legend:**

⬚ Rec Plan Boundary

— Equal or Less than 8.0 per million

— 10.0 per million

0   700   1,400   2,800 Feet
N

Location of Maximum Residential Cancer Risk
Cache Creek
CEMEX Construction Materials Pacific
Yolo County, California

Figure 5

8/24/2022

*Disclaimer: The data was mapped for planning purposes only. No liability is assumed for accuracy of the data shown.*

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Maximum Residential
Cancer Risk
Cancer Risk: 8.1

Maximum Off-Site Worker Cancer Risk
Cancer Risk: 0.6

Aerial photo adapted from Google Earth Maps Imagery Date 10/21/2020.

Legend:

▭ Rec Plan Boundary

—— Less than 5.0 per million

0    1,000    2,000    4,000  Feet

N

Spatial Distribution of Worker Cancer Risk
Cache Creek
CEMEX Construction Materials Pacific
Yolo County, California

Figure 6

8/24/2022

*Disclaimer: The data was mapped for planning purposes only. No liability is assumed for accuracy of the data shown.*

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# Table 1
## Summary of Annual DPM Emissions

CEMEX Construction Materials Pacific, LLC.
Cache Creek Mining Permit and Reclamation Plan Amendment Project
Health Risk Assessment

**AVERAGE ANNUAL PM2.5 EXHAUST EMISSIONS (TONS/YEAR)**

| Mining Operations[1] | | | Processing Plants[2] | | |
|---|---|---|---|---|---|
| Year | Calendar Year | PM2.5 Exhaust (tons/yr) | Year | Calendar Year | PM2.5 Exhaust (tons/yr) |
| 1 | 2022 | 0.1803 | 1 | 2022 | 0.3800 |
| 2 | 2023 | 0.1803 | 2 | 2023 | 0.3800 |
| 3 | 2024 | 0.1803 | 3 | 2024 | 0.3800 |
| 4 | 2025 | 0.1803 | 4 | 2025 | 0.3800 |
| 5 | 2026 | 0.1803 | 5 | 2026 | 0.3800 |
| 6 | 2027 | 0.1803 | 6 | 2027 | 0.3800 |
| 7 | 2028 | 0.1803 | 7 | 2028 | 0.3800 |
| 8 | 2029 | 0.1803 | 8 | 2029 | 0.3800 |
| 9 | 2030 | 0.1803 | 9 | 2030 | 0.3800 |
| 10 | 2031 | 0.1803 | 10 | 2031 | 0.3800 |
| 11 | 2032 | 0.1803 | 11 | 2032 | 0.3800 |
| 12 | 2033 | 0.1803 | 12 | 2033 | 0.3800 |
| 13 | 2034 | 0.1803 | 13 | 2034 | 0.3800 |
| 14 | 2035 | 0.1803 | 14 | 2035 | 0.3800 |
| 15 | 2036 | 0.1803 | 15 | 2036 | 0.3800 |
| 16 | 2037 | 0.1803 | 16 | 2037 | 0.3800 |
| 17 | 2038 | 0.1803 | 17 | 2038 | 0.3800 |
| 18 | 2039 | 0.1803 | 18 | 2039 | 0.3800 |
| 19 | 2040 | 0.1803 | 19 | 2040 | 0.3800 |
| 20 | 2041 | 0.1803 | 20 | 2041 | 0.3800 |
| 21 | 2042 | 0.1803 | 21 | 2042 | 0.3800 |
| 22 | 2043 | 0.1803 | 22 | 2043 | 0.3800 |
| 23 | 2044 | 0.1803 | 23 | 2044 | 0.3800 |
| 24 | 2045 | 0.1803 | 24 | 2045 | 0.3800 |
| 25 | 2046 | 0.1803 | 25 | 2046 | 0.3800 |
| 26 | 2047 | 0.1803 | 26 | 2047 | 0.3800 |
| 27 | 2048 | 0 | 27 | 2048 | 0 |
| 28 | 2049 | 0 | 28 | 2049 | 0 |
| 29 | 2050 | 0 | 29 | 2050 | 0 |
| 30 | 2051 | 0 | 30 | 2051 | 0 |
| | Average: | 0.1563 tons/yr | | Average: | 0.3293 tons/yr |
| | | 312.52 lbs/yr | | | 658.67 lbs/yr |

**Source:**
Air and Greenhouse Gas Emissions Study (Compass Land Group, July 2, 2020).

**Notes:**
1. PM2.5 exhaust inputs from Air and Greenhouse Gas Emissions Study, Appendix C-1, Annual Results Summary.
2. PM2.5 exhaust inputs from Air and Greenhouse Gas Emissions Study:
   Off-road equipment and engine use at processing plants from App C-3, Module 4, and App C-4, Module 4, and App C-5, Module 3.

# Table 2
# Summary of Respirable Silica Emissions

CEMEX Construction Materials Pacific, LLC.
Cache Creek Mining Permit and Reclamation Plan Amendment Project
Health Risk Assessment

**RESPIRABLE SILICA INPUTS**

| Area | Emission Factor | Fugitive PM10 (lbs/yr) | Fugitive PM10 (lbs/hr) | Resp. Silica (lbs/yr) | Resp. Silica (lbs/hr) |
|---|---|---|---|---|---|
| Mine | 0.08 | 17968.00 | 13.65 | 1437.44 | 1.09 |
| Plant | 0.08 | 30580.00 | 22.85 | 2446.40 | 1.83 |

**Sources:**

Air and Greenhouse Gas Emissions Study (Compass Land Group, July 2, 2020).

PM4 Crystalline Silica Emission Factors and Ambient Concentrations at Aggregate-Producing Sources in California (Richards et al., November 2009).

**Notes:**

1. Fugitive $PM_{10}$ inputs from Air and Greenhouse Gas Emissions Study, Appendices C-1, C-2.1, C-2.2, C-3.1, C-3.2, C-4.1, C-4.2, C-5.1, and C-5.2.

# Screenshot of Emissions Inventory

| | SrcID | StkID | ProID | PolID | PolAbbrev | Multiplier | Annual Ems (lbs/yr) | Max Hr Ems (lbs/hr) | MWAF |
|---|---|---|---|---|---|---|---|---|---|
| ▶ | PLANT | 0 | 0 | 9901 | DieselExhPM | 1 | 658.67 | 0.075 | 1 |
| | MINE | 0 | 0 | 9901 | DieselExhPM | 1 | 312.52 | 0.036 | 1 |
| | PLANT | 0 | 0 | 1175 | Silica, Crystln | 1 | 2446.4 | 1.83 | 1 |
| | MINE | 0 | 0 | 1175 | Silica, Crystln | 1 | 1437.44 | 1.09 | 1 |

COMPASS LAND
G R O U P

## Screenshot of Exposure Pathways for Cancer Risk Evaluation

Select Pathways to Evaluate and Define Site Parameters

Pathways to Evaluate   🟩 Inh   🟩 Soil   🟩 Derm   🟩 MMilk   🟥 Drink Water   🟥 Fish   🟥 HG Produce   🟥 Beef & Dairy   🟥 Pig, Chic ◄ ►

◯ Inhalation Only
🔵 Mandatory Minimum Pathways
◯ Worker Pathways
◯ User Defined
　☑ Inhalation (Always On)
　☐ Soil Ingestion
　☐ Dermal
　☐ Mother's Milk
　☐ Drinking Water
　☐ Fish
　☐ Homegrown Produce
　☐ Beef
　☐ Dairy Cows
　☐ Pigs
　☐ Chickens
　☐ Eggs

Help me choose

Click to select SCAQMD mandatory minimum pathways

Deposition Rate (for noninhalation pathways only)
🔵 0.05 m/s (uncontrolled sources)
◯ 0.02 m/s (controlled sources)
◯ Other _____

Advanced Options (Tier 2) - For noninhalation pathways only

☐ Change exposure frequency (days/year):　350　What's this do?

**COMPASS LAND**
G R O U P

# Screenshot of Plot Files

List of PLOTFILES to Convert

Add   Import

| | Source ID | PERIOD File | Max 1-Hr File |
|---|---|---|---|
| ▶ | PLANT | C:\Lakes\Projects\P012 Cache Creek HRA\Cache Creek HRA.AD\PE00G001.PLT | C:\Lakes\Projects\P012 Cache Creek HRA\Cache Creek HRA.AD\01H1G001.PLT |
| | MINE | C:\Lakes\Projects\P012 Cache Creek HRA\Cache Creek HRA.AD\PE00G002.PLT | C:\Lakes\Projects\P012 Cache Creek HRA\Cache Creek HRA.AD\01H1G002.PLT |

## Screenshot of Cancer Risk By Receptor

View Risk Results

Cancer | Chronic | 8-hour | Acute

Load File | Risk Views | Options | Export

| | REC | GRP | NETID | X | Y | RISK_SUM | SCENARIO |
|---|---|---|---|---|---|---|---|
| ▶ | 1 | ALL | UCART1 | 588911.82 | 4279161.76 | 1.0912e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 2 | ALL | UCART1 | 589011.82 | 4279161.76 | 1.1129e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 3 | ALL | UCART1 | 589111.82 | 4279161.76 | 1.1398e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 4 | ALL | UCART1 | 589211.82 | 4279161.76 | 1.1706e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5 | ALL | UCART1 | 589311.82 | 4279161.76 | 1.2052e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 6 | ALL | UCART1 | 589411.82 | 4279161.76 | 1.2407e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 7 | ALL | UCART1 | 589511.82 | 4279161.76 | 1.2760e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 8 | ALL | UCART1 | 589611.82 | 4279161.76 | 1.3129e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 9 | ALL | UCART1 | 589711.82 | 4279161.76 | 1.3478e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 10 | ALL | UCART1 | 589811.82 | 4279161.76 | 1.3803e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 11 | ALL | UCART1 | 589911.82 | 4279161.76 | 1.4098e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 12 | ALL | UCART1 | 590011.82 | 4279161.76 | 1.4446e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 13 | ALL | UCART1 | 590111.82 | 4279161.76 | 1.4694e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 14 | ALL | UCART1 | 590211.82 | 4279161.76 | 1.4921e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 15 | ALL | UCART1 | 590311.82 | 4279161.76 | 1.5187e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 16 | ALL | UCART1 | 590411.82 | 4279161.76 | 1.5418e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 17 | ALL | UCART1 | 590511.82 | 4279161.76 | 1.5669e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 18 | ALL | UCART1 | 590611.82 | 4279161.76 | 1.5947e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 19 | ALL | UCART1 | 590711.82 | 4279161.76 | 1.6253e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 20 | ALL | UCART1 | 590811.82 | 4279161.76 | 1.6579e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 21 | ALL | UCART1 | 590911.82 | 4279161.76 | 1.6904e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 22 | ALL | UCART1 | 591011.82 | 4279161.76 | 1.7218e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 23 | ALL | UCART1 | 591111.82 | 4279161.76 | 1.7514e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 24 | ALL | UCART1 | 591211.82 | 4279161.76 | 1.7781e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 25 | ALL | UCART1 | 591311.82 | 4279161.76 | 1.8018e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 26 | ALL | UCART1 | 591411.82 | 4279161.76 | 1.8237e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 27 | ALL | UCART1 | 591511.82 | 4279161.76 | 1.8454e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| | 28 | ALL | UCART1 | 591611.82 | 4279161.76 | 1.8683e-06 | 30YrCancerDerived_InhSoilDermMMilk |

File: C:\HARP2\Projects\CACHE_HRA\hra\CACHE_HRA_CANCERCancerRiskSumByRec.csv [DESC: RISK TOTALS BY RECEPTOR]

## Screenshot of Cancer Risk By Receptor (Continued)

View Risk Results

Cancer | Chronic | 8-hour | Acute

Load File | Risk Views | Options | Export

| REC | GRP | NETID | X | Y | RISK_SUM | SCENARIO |
|---|---|---|---|---|---|---|
| 1760 | ALL | UCART1 | 592311.82 | 4281461.76 | 8.6348e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1761 | ALL | UCART1 | 592411.82 | 4281461.76 | 8.7122e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1762 | ALL | UCART1 | 592511.82 | 4281461.76 | 8.7302e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1763 | ALL | UCART1 | 592611.82 | 4281461.76 | 8.7024e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1764 | ALL | UCART1 | 592711.82 | 4281461.76 | 8.6302e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1765 | ALL | UCART1 | 592811.82 | 4281461.76 | 8.5213e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1766 | ALL | UCART1 | 592911.82 | 4281461.76 | 8.3834e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1767 | ALL | UCART1 | 593011.82 | 4281461.76 | 8.2431e-06 | 30Yr |
| 1768 | ALL | UCART1 | 593111.82 | 4281461.76 | 8.1044e-06 | 30Yr |
| 1769 | ALL | UCART1 | 593211.82 | 4281461.76 | 7.9836e-06 | 30Yr |
| 1770 | ALL | UCART1 | 593311.82 | 4281461.76 | 7.9022e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1771 | ALL | UCART1 | 593411.82 | 4281461.76 | 7.8693e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1772 | ALL | UCART1 | 593511.82 | 4281461.76 | 7.8871e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1773 | ALL | UCART1 | 593611.82 | 4281461.76 | 7.9307e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1774 | ALL | UCART1 | 593711.82 | 4281461.76 | 7.9732e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1775 | ALL | UCART1 | 593811.82 | 4281461.76 | 8.0409e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1776 | ALL | UCART1 | 593911.82 | 4281461.76 | 8.0942e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1777 | ALL | UCART1 | 594011.82 | 4281461.76 | 8.1414e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1778 | ALL | UCART1 | 594111.82 | 4281461.76 | 8.1671e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1779 | ALL | UCART1 | 594211.82 | 4281461.76 | 8.1698e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1780 | ALL | UCART1 | 594311.82 | 4281461.76 | 8.1492e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1781 | ALL | UCART1 | 594411.82 | 4281461.76 | 8.0861e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1782 | ALL | UCART1 | 594511.82 | 4281461.76 | 7.9906e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1783 | ALL | UCART1 | 594611.82 | 4281461.76 | 7.8540e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1784 | ALL | UCART1 | 594711.82 | 4281461.76 | 7.6830e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1785 | ALL | UCART1 | 594811.82 | 4281461.76 | 7.4384e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1786 | ALL | UCART1 | 594911.82 | 4281461.76 | 7.0913e-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1787 | ALL | UCART1 | 595011.82 | 4281461.76 | 6.6149e-06 | 30YrCancerDerived_InhSoilDermMMilk |

**Maximum Residential**

File: C:\HARP2\Projects\CACHE_HRA\hra\CACHE_HRA_CANCERCancerRiskSumByRec.csv [DESC: RISK TOTALS BY RECEPTOR]

## Screenshot of Cancer Risk By Receptor (Continued)

View Risk Results

Cancer | Chronic | 8-hour | Acute

Load File    Risk Views    Options    Export

| | REC | GRP | NETID | X | Y | RISK_SUM | SCENARIO |
|---|---|---|---|---|---|---|---|
| | 5619 | ALL | UCART1 | 595711.82 | 4286561.76 | 7.8330e-07 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5620 | ALL | UCART1 | 595811.82 | 4286561.76 | 7.7572e-07 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5621 | ALL | UCART1 | 595911.82 | 4286561.76 | 7.5904e-07 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5622 | ALL | UCART1 | 596011.82 | 4286561.76 | 7.1619e-07 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5623 | ALL | UCART1 | 596111.82 | 4286561.76 | 6.9800e-07 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5624 | ALL | UCART1 | 596211.82 | 4286561.76 | 6.7169e-07 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5625 | ALL | UCART1 | 596311.82 | 4286561.76 | 6.5833e-07 | 30YrC |
| | 5626 | ALL | | 589504.54 | 4281702.7 | 2.9000e-06 | 30YrC |
| ▶ | 5627 | ALL | | 590047.36 | 4281896.49 | 4.3891e-06 | 30YrC |
| | 5628 | ALL | | 592104.83 | 4283540.64 | 2.3248e-05 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5629 | ALL | | 592154.31 | 4283535.55 | 2.2079e-05 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5630 | ALL | | 592203.78 | 4283530.47 | 2.1102e-05 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5631 | ALL | | 592253.25 | 4283525.38 | 2.0287e-05 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5632 | ALL | | 592302.73 | 4283520.29 | 1.9595e-05 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5633 | ALL | | 592352.2 | 4283515.21 | 1.8996e-05 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5634 | ALL | | 592401.67 | 4283510.12 | 1.8468e-05 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5635 | ALL | | 592451.14 | 4283505.04 | 1.7990e-05 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5636 | ALL | | 592500.62 | 4283499.95 | 1.7541e-05 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5637 | ALL | | 592550.09 | 4283494.86 | 1.7091e-05 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5638 | ALL | | 592599.56 | 4283489.78 | 1.6555e-05 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5639 | ALL | | 592109.95 | 4283590.38 | 2.0927e-05 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5640 | ALL | | 592159.42 | 4283585.29 | 1.9851e-05 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5641 | ALL | | 592208.89 | 4283580.2 | 1.8962e-05 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5642 | ALL | | 592258.37 | 4283575.12 | 1.8216e-05 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5643 | ALL | | 592307.84 | 4283570.03 | 1.7580e-05 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5644 | ALL | | 592357.31 | 4283564.95 | 1.7026e-05 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5645 | ALL | | 592406.78 | 4283559.86 | 1.6532e-05 | 30YrCancerDerived_InhSoilDermMMilk |
| | 5646 | ALL | | 592456.26 | 4283554.77 | 1.6103e-05 | 30YrCancerDerived_InhSoilDermMMilk |

**Discrete Receptors**

File: C:\HARP2\Projects\CACHE_HRA\hra\CACHE_HRA_CANCERCancerRiskSumByRec.csv [DESC: RISK TOTALS BY RECEPTOR]

**Screenshot of Chronic Hazard Index by Receptor**

# Screenshot of Chronic Hazard Index by Receptor (continued)

| RESP | SKIN | EYE | BONE/TEETH | ENDO | BLOOD | ODOR | GENERAL | MAXHI |
|---|---|---|---|---|---|---|---|---|
| 1.4344e-02 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 1.4344e-02 |
| 1.4223e-02 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | | | | 1.4223e-02 |
| 1.4171e-02 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | | | | 1.4171e-02 |
| 1.4206e-02 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | | | | 1.4206e-02 |
| 1.4331e-02 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | | | | 1.4331e-02 |
| 1.4499e-02 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | | | | 1.4499e-02 |
| 1.4659e-02 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 1.4659e-02 |
| 1.4860e-02 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 1.4860e-02 |
| 1.5027e-02 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 1.5027e-02 |
| 1.5177e-02 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 1.5177e-02 |
| 1.5281e-02 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 1.5281e-02 |
| 1.5337e-02 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 1.5337e-02 |
| 1.5343e-02 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 1.5343e-02 |
| 1.5263e-02 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 1.5263e-02 |
| 1.5116e-02 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 1.5116e-02 |
| 1.4885e-02 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 1.4885e-02 |
| 1.4583e-02 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 1.4583e-02 |
| 1.4133e-02 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 1.4133e-02 |
| 1.3480e-02 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 1.3480e-02 |
| 1.2571e-02 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 1.2571e-02 |
| 1.1201e-02 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 1.1201e-02 |
| 9.6913e-03 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 9.6913e-03 |
| 8.3753e-03 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 8.3753e-03 |
| 7.2811e-03 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 7.2811e-03 |
| 6.3870e-03 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 6.3870e-03 |
| 5.6513e-03 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 5.6513e-03 |
| 5.0413e-03 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 0.0000e+00 | 5.0413e-03 |

**Maximum Residential (ID 1768)**

S BY RECEPTOR]

# Screenshot of Acute Hazard Index by Receptor



View Risk Results

Cancer | Chronic | 8-hour | **Acute**

Load File    Risk Views    Export

| | REC | GRP | NETID | X | Y | SCENARIO | CV | CNS |
|---|---|---|---|---|---|---|---|---|
| ▶ | 1 | ALL | UCART1 | 588911.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 2 | ALL | UCART1 | 589011.82 | | | 00e+00 | 0.0000e+00 |
| | 3 | ALL | UCART1 | 589111.82 | | **All zero values** | 00e+00 | 0.0000e+00 |
| | 4 | ALL | UCART1 | 589211.82 | | | 00e+00 | 0.0000e+00 |
| | 5 | ALL | UCART1 | 589311.82 | | | 00e+00 | 0.0000e+00 |
| | 6 | ALL | UCART1 | 589411.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 7 | ALL | UCART1 | 589511.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 8 | ALL | UCART1 | 589611.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 9 | ALL | UCART1 | 589711.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 10 | ALL | UCART1 | 589811.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 11 | ALL | UCART1 | 589911.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 12 | ALL | UCART1 | 590011.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 13 | ALL | UCART1 | 590111.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 14 | ALL | UCART1 | 590211.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 15 | ALL | UCART1 | 590311.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 16 | ALL | UCART1 | 590411.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 17 | ALL | UCART1 | 590511.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 18 | ALL | UCART1 | 590611.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 19 | ALL | UCART1 | 590711.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 20 | ALL | UCART1 | 590811.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 21 | ALL | UCART1 | 590911.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 22 | ALL | UCART1 | 591011.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 23 | ALL | UCART1 | 591111.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 24 | ALL | UCART1 | 591211.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 25 | ALL | UCART1 | 591311.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 26 | ALL | UCART1 | 591411.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 27 | ALL | UCART1 | 591511.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |
| | 28 | ALL | UCART1 | 591611.82 | 4279161.76 | NonCancerAcute | 0.0000e+00 | 0.0000e+00 |

File: C:\HARP2\Projects\CACHE_HRA\hra\CACHE_HRA_ACUTENCAcuteRiskSumByRec.csv [DESC: RISK TOTALS BY RECEPTOR]

## Screenshot of Worker Cancer Risk Selection

COMPASS LAND
G R O U P

## Screenshot of Worker Cancer Exposure Pathway

Select Pathways to Evaluate and Define Site Parameters

Pathways to Evaluate   ● Inh   ● Soil   ● Derm   ● MMilk   ● Drink Water   ● Fish   ● HG Produce   ● Beef & Dairy   ● Pig, Chicken, & Egg

○ Inhalation Only

○ Mandatory Minimum Pathways

● Worker Pathways

○ User Defined

☑ Inhalation (Always On)

☐ Soil Ingestion

☐ Dermal

☐ Mother's Milk

☐ Drinking Water

☐ Fish

☐ Homegrown Produce

☐ Beef

☐ Dairy Cows

☐ Pigs

☐ Chickens

☐ Eggs

Help me choose

Click to select SCAQMD mandatory minimum pathways

Deposition Rate (for noninhalation pathways only)

● 0.05 m/s (uncontrolled sources)

○ 0.02 m/s (controlled sources)

○ Other

Advanced Options (Tier 2) - For noninhalation pathways only

☐ Change exposure frequency (days/year):    350   What's this do?

COMPASS LAND
G R O U P

## Screenshot of Worker Cancer Risk



| | REC | GRP | NETID | X | Y | RISK_SUM | SCENARIO |
|---|---|---|---|---|---|---|---|
| ▶ | 1849 | ALL | UCART1 | 593711.82 | 4281561.76 | 6.1618e-07 | 25YrCancerDerived_InhSoilDerm |
| | 1850 | ALL | UCART1 | 593811.82 | 4281561.76 | 6.2611e-07 | 25YrCa |
| | 1851 | ALL | UCART1 | 593911.82 | 4281561.76 | 6.3462e-07 | 25YrCa |
| | 1852 | ALL | UCART1 | 594011.82 | 4281561.76 | 6.3919e-07 | 25YrCa |
| | 1853 | ALL | UCART1 | 594111.82 | 4281561.76 | 6.4177e-07 | 25YrCa |
| | 1854 | ALL | UCART1 | 594211.82 | 4281561.76 | 6.5103e-07 | 25YrCa |
| | 1855 | ALL | UCART1 | 594311.82 | 4281561.76 | 6.5389e-07 | 25YrCa |
| | 1856 | ALL | UCART1 | 594411.82 | 4281561.76 | 6.5549e-07 | 25YrCa |
| | 1857 | ALL | UCART1 | 594511.82 | 4281561.76 | 6.5071e-07 | 25YrCancerDerived_InhSoilDerm |
| | 1858 | ALL | UCART1 | 594611.82 | 4281561.76 | 6.4485e-07 | 25YrCancerDerived_InhSoilDerm |
| | 1859 | ALL | UCART1 | 594711.82 | 4281561.76 | 6.3846e-07 | 25YrCancerDerived_InhSoilDerm |
| | 1860 | ALL | UCART1 | 594811.82 | 4281561.76 | 6.2484e-07 | 25YrCancerDerived_InhSoilDerm |
| | 1861 | ALL | UCART1 | 594911.82 | 4281561.76 | 5.9853e-07 | 25YrCancerDerived_InhSoilDerm |
| | 1862 | ALL | UCART1 | 595011.82 | 4281561.76 | 5.4122e-07 | 25YrCancerDerived_InhSoilDerm |
| | 1863 | ALL | UCART1 | 595111.82 | 4281561.76 | 4.4347e-07 | 25YrCancerDerived_InhSoilDerm |
| | 1864 | ALL | UCART1 | 595211.82 | 4281561.76 | 3.6775e-07 | 25YrCancerDerived_InhSoilDerm |
| | 1865 | ALL | UCART1 | 595311.82 | 4281561.76 | 3.1185e-07 | 25YrCancerDerived_InhSoilDerm |
| | 1866 | ALL | UCART1 | 595411.82 | 4281561.76 | 2.6852e-07 | 25YrCancerDerived_InhSoilDerm |
| | 1867 | ALL | UCART1 | 595511.82 | 4281561.76 | 2.3434e-07 | 25YrCancerDerived_InhSoilDerm |
| | 1868 | ALL | UCART1 | 595611.82 | 4281561.76 | 2.0666e-07 | 25YrCancerDerived_InhSoilDerm |
| | 1869 | ALL | UCART1 | 595711.82 | 4281561.76 | 1.8425e-07 | 25YrCancerDerived_InhSoilDerm |
| | 1870 | ALL | UCART1 | 595811.82 | 4281561.76 | 1.6562e-07 | 25YrCancerDerived_InhSoilDerm |
| | 1871 | ALL | UCART1 | 595911.82 | 4281561.76 | 1.5025e-07 | 25YrCancerDerived_InhSoilDerm |
| | 1872 | ALL | UCART1 | 596011.82 | 4281561.76 | 1.3722e-07 | 25YrCancerDerived_InhSoilDerm |
| | 1873 | ALL | UCART1 | 596111.82 | 4281561.76 | 1.2616e-07 | 25YrCancerDerived_InhSoilDerm |
| | 1874 | ALL | UCART1 | 596211.82 | 4281561.76 | 1.1667e-07 | 25YrCancerDerived_InhSoilDerm |
| | 1875 | ALL | UCART1 | 596311.82 | 4281561.76 | 1.0844e-07 | 25YrCancerDerived_InhSoilDerm |
| | 1876 | ALL | UCART1 | 588911.82 | 4281661.76 | 1.4240e-07 | 25YrCancerDerived_InhSoilDerm |

**Maximum Worker (Private agricultural business)**

File: C:\HARP2\Projects\CACHE_HRA\hra\CACHE_HRA_WORKER_CANCERCancerRiskSumByRec.csv [DESC: RISK TOTALS BY RECEPTOR]

# Cancer Risk

| \*HARP - HRACalc v19044 8/19/2022 1:52:18 PM - Cancer Risk - Input File: C:\HARP2\Projects\CACHE_HRA\hra\CACHE_HRA_CANCERHRAInput. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| REC | GRP | NETID | X | Y | CONC | POLID | POLABBREV | RISK_SUM | SCENARIO |
| 1 | ALL | UCART1 | 588911.8 | 4279162 | 0.001234 | 9901 | DieselExhPM | 1.09E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 2 | ALL | UCART1 | 589011.8 | 4279162 | 0.001259 | 9901 | DieselExhPM | 1.11E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 3 | ALL | UCART1 | 589111.8 | 4279162 | 0.001289 | 9901 | DieselExhPM | 1.14E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 4 | ALL | UCART1 | 589211.8 | 4279162 | 0.001324 | 9901 | DieselExhPM | 1.17E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 5 | ALL | UCART1 | 589311.8 | 4279162 | 0.001363 | 9901 | DieselExhPM | 1.21E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 6 | ALL | UCART1 | 589411.8 | 4279162 | 0.001403 | 9901 | DieselExhPM | 1.24E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 7 | ALL | UCART1 | 589511.8 | 4279162 | 0.001443 | 9901 | DieselExhPM | 1.28E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 8 | ALL | UCART1 | 589611.8 | 4279162 | 0.001485 | 9901 | DieselExhPM | 1.31E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 9 | ALL | UCART1 | 589711.8 | 4279162 | 0.001524 | 9901 | DieselExhPM | 1.35E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 10 | ALL | UCART1 | 589811.8 | 4279162 | 0.001561 | 9901 | DieselExhPM | 1.38E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 11 | ALL | UCART1 | 589911.8 | 4279162 | 0.001594 | 9901 | DieselExhPM | 1.41E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 12 | ALL | UCART1 | 590011.8 | 4279162 | 0.001634 | 9901 | DieselExhPM | 1.44E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 13 | ALL | UCART1 | 590111.8 | 4279162 | 0.001662 | 9901 | DieselExhPM | 1.47E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 14 | ALL | UCART1 | 590211.8 | 4279162 | 0.001687 | 9901 | DieselExhPM | 1.49E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 15 | ALL | UCART1 | 590311.8 | 4279162 | 0.001717 | 9901 | DieselExhPM | 1.52E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 16 | ALL | UCART1 | 590411.8 | 4279162 | 0.001744 | 9901 | DieselExhPM | 1.54E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 17 | ALL | UCART1 | 590511.8 | 4279162 | 0.001772 | 9901 | DieselExhPM | 1.57E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 18 | ALL | UCART1 | 590611.8 | 4279162 | 0.001803 | 9901 | DieselExhPM | 1.59E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 19 | ALL | UCART1 | 590711.8 | 4279162 | 0.001838 | 9901 | DieselExhPM | 1.63E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 20 | ALL | UCART1 | 590811.8 | 4279162 | 0.001875 | 9901 | DieselExhPM | 1.66E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 21 | ALL | UCART1 | 590911.8 | 4279162 | 0.001912 | 9901 | DieselExhPM | 1.69E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 22 | ALL | UCART1 | 591011.8 | 4279162 | 0.001947 | 9901 | DieselExhPM | 1.72E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 23 | ALL | UCART1 | 591111.8 | 4279162 | 0.001981 | 9901 | DieselExhPM | 1.75E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 24 | ALL | UCART1 | 591211.8 | 4279162 | 0.002011 | 9901 | DieselExhPM | 1.78E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 25 | ALL | UCART1 | 591311.8 | 4279162 | 0.002038 | 9901 | DieselExhPM | 1.80E-06 | 30YrCancerDerived_InhSoilDermMMilk |

## Cancer Risk (continued)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1768 | ALL | UCART1 | 593111.8 | 4281462 | 0.009165 | 9901 | DieselExhPM | 8.10E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1769 | ALL | UCART1 | 593211.8 | 4281462 | 0.009029 | 9901 | DieselExhPM | 7.98E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1770 | ALL | UCART1 | | | .008937 | 9901 | DieselExhPM | 7.90E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1771 | ALL | UCART1 | | | .008899 | 9901 | DieselExhPM | 7.87E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1772 | ALL | UCART1 | | | .008919 | 9901 | DieselExhPM | 7.89E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1773 | ALL | UCART1 | 593611.8 | 4281462 | 0.008969 | 9901 | DieselExhPM | 7.93E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1774 | ALL | UCART1 | 593711.8 | 4281462 | 0.009017 | 9901 | DieselExhPM | 7.97E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1775 | ALL | UCART1 | 593811.8 | 4281462 | 0.009093 | 9901 | DieselExhPM | 8.04E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1776 | ALL | UCART1 | 593911.8 | 4281462 | 0.009154 | 9901 | DieselExhPM | 8.09E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1777 | ALL | UCART1 | 594011.8 | 4281462 | 0.009207 | 9901 | DieselExhPM | 8.14E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1778 | ALL | UCART1 | 594111.8 | 4281462 | 0.009236 | 9901 | DieselExhPM | 8.17E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1779 | ALL | UCART1 | 594211.8 | 4281462 | 0.009239 | 9901 | DieselExhPM | 8.17E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1780 | ALL | UCART1 | 594311.8 | 4281462 | 0.009216 | 9901 | DieselExhPM | 8.15E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1781 | ALL | UCART1 | 594411.8 | 4281462 | 0.009144 | 9901 | DieselExhPM | 8.09E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1782 | ALL | UCART1 | 594511.8 | 4281462 | 0.009037 | 9901 | DieselExhPM | 7.99E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1783 | ALL | UCART1 | 594611.8 | 4281462 | 0.008882 | 9901 | DieselExhPM | 7.85E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1784 | ALL | UCART1 | 594711.8 | 4281462 | 0.008689 | 9901 | DieselExhPM | 7.68E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1785 | ALL | UCART1 | 594811.8 | 4281462 | 0.008412 | 9901 | DieselExhPM | 7.44E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1786 | ALL | UCART1 | 594911.8 | 4281462 | 0.00802 | 9901 | DieselExhPM | 7.09E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1787 | ALL | UCART1 | 595011.8 | 4281462 | 0.007481 | 9901 | DieselExhPM | 6.61E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1788 | ALL | UCART1 | 595111.8 | 4281462 | 0.006678 | 9901 | DieselExhPM | 5.90E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1789 | ALL | UCART1 | 595211.8 | 4281462 | 0.005795 | 9901 | DieselExhPM | 5.12E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1790 | ALL | UCART1 | 595311.8 | 4281462 | 0.005026 | 9901 | DieselExhPM | 4.44E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1791 | ALL | UCART1 | 595411.8 | 4281462 | 0.004385 | 9901 | DieselExhPM | 3.88E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1792 | ALL | UCART1 | 595511.8 | 4281462 | 0.00386 | 9901 | DieselExhPM | 3.41E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1793 | ALL | UCART1 | 595611.8 | 4281462 | 0.003428 | 9901 | DieselExhPM | 3.03E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1794 | ALL | UCART1 | 595711.8 | 4281462 | 0.003068 | 9901 | DieselExhPM | 2.71E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 1795 | ALL | UCART1 | 595811.8 | 4281462 | 0.002765 | 9901 | DieselExhPM | 2.44E-06 | 30YrCancerDerived_InhSoilDermMMilk |

**Maximum Residential**

# Cancer Risk (continued)

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 5626 | ALL | | 589504.5 | 4281703 | 0.00328 | 9901 | DieselExhPM | 2.90E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 5627 | ALL | | 590047.4 | 4281896 | 0.004964 | 9901 | DieselExhPM | 4.39E-06 | 30YrCancerDerived_InhSoilDermMMilk |
| 5628 | ALL | | …541 | | 0.026291 | 9901 | DieselExhPM | 2.32E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5629 | ALL | | …536 | | 0.024969 | 9901 | DieselExhPM | 2.21E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5630 | ALL | | …530 | | 0.023864 | 9901 | DieselExhPM | 2.11E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5631 | ALL | | 592255.3 | 4283525 | 0.022943 | 9901 | DieselExhPM | 2.03E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5632 | ALL | | 592302.7 | 4283520 | 0.02216 | 9901 | DieselExhPM | 1.96E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5633 | ALL | | 592352.2 | 4283515 | 0.021483 | 9901 | DieselExhPM | 1.90E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5634 | ALL | | 592401.7 | 4283510 | 0.020886 | 9901 | DieselExhPM | 1.85E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5635 | ALL | | 592451.1 | 4283505 | 0.020345 | 9901 | DieselExhPM | 1.80E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5636 | ALL | | 592500.6 | 4283500 | 0.019837 | 9901 | DieselExhPM | 1.75E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5637 | ALL | | 592550.1 | 4283495 | 0.019328 | 9901 | DieselExhPM | 1.71E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5638 | ALL | | 592599.6 | 4283490 | 0.018722 | 9901 | DieselExhPM | 1.66E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5639 | ALL | | 592110 | 4283590 | 0.023667 | 9901 | DieselExhPM | 2.09E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5640 | ALL | | 592159.4 | 4283585 | 0.022449 | 9901 | DieselExhPM | 1.99E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5641 | ALL | | 592208.9 | 4283580 | 0.021444 | 9901 | DieselExhPM | 1.90E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5642 | ALL | | 592258.4 | 4283575 | 0.020601 | 9901 | DieselExhPM | 1.82E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5643 | ALL | | 592307.8 | 4283570 | 0.019881 | 9901 | DieselExhPM | 1.76E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5644 | ALL | | 592357.3 | 4283565 | 0.019254 | 9901 | DieselExhPM | 1.70E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5645 | ALL | | 592406.8 | 4283560 | 0.018696 | 9901 | DieselExhPM | 1.65E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5646 | ALL | | 592456.3 | 4283555 | 0.018211 | 9901 | DieselExhPM | 1.61E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5647 | ALL | | 592505.7 | 4283550 | 0.01773 | 9901 | DieselExhPM | 1.57E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5648 | ALL | | 592555.2 | 4283545 | 0.017225 | 9901 | DieselExhPM | 1.52E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5649 | ALL | | 592604.7 | 4283540 | 0.016631 | 9901 | DieselExhPM | 1.47E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5650 | ALL | | 592659.4 | 4283466 | 0.01851 | 9901 | DieselExhPM | 1.64E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5651 | ALL | | 592704.1 | 4283446 | 0.018311 | 9901 | DieselExhPM | 1.62E-05 | 30YrCancerDerived_InhSoilDermMMilk |
| 5652 | ALL | | 592748.9 | 4283427 | 0.01813 | 9901 | DieselExhPM | 1.60E-05 | 30YrCancerDerived_InhSoilDermMMilk |

**Discrete Receptors (5626, 5627)**

**COMPASS LAND GROUP**

# Chronic Risk

| \*HARP - HRACalc v19044 8/19/2022 2:20:25 PM - Chronic Risk - Input File: C:\HARP2\Projects\CACHE_HRA\hra\CACHE_HRA_CHRONICHRAInput.hra | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REC | GRP | NETID | X | Y | SCENARIO | CV | CNS | IMMUN | KIDNEY | GILV | REPRO/DE | RESP | SKIN | EYE | BONE/TEE | ENDO | BLOOD | ODOR | GENERAL | MAXHI |
| 1 | ALL | UCART1 | 588911.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.87E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.87E-03 |
| 2 | ALL | UCART1 | 589011.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.91E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.91E-03 |
| 3 | ALL | UCART1 | 589111.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.95E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.95E-03 |
| 4 | ALL | UCART1 | 589211.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.01E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.01E-03 |
| 5 | ALL | UCART1 | 589311.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.07E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.07E-03 |
| 6 | ALL | UCART1 | 589411.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.13E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.13E-03 |
| 7 | ALL | UCART1 | 589511.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.19E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.19E-03 |
| 8 | ALL | UCART1 | 589611.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.25E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.25E-03 |
| 9 | ALL | UCART1 | 589711.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.31E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.31E-03 |
| 10 | ALL | UCART1 | 589811.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.36E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.36E-03 |
| 11 | ALL | UCART1 | 589911.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.41E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.41E-03 |
| 12 | ALL | UCART1 | 590011.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.47E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.47E-03 |
| 13 | ALL | UCART1 | 590111.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.52E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.52E-03 |
| 14 | ALL | UCART1 | 590211.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.56E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.56E-03 |
| 15 | ALL | UCART1 | 590311.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.61E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.61E-03 |
| 16 | ALL | UCART1 | 590411.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.65E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.65E-03 |
| 17 | ALL | UCART1 | 590511.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.69E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.69E-03 |
| 18 | ALL | UCART1 | 590611.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.74E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.74E-03 |
| 19 | ALL | UCART1 | 590711.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.79E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.79E-03 |
| 20 | ALL | UCART1 | 590811.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.85E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.85E-03 |
| 21 | ALL | UCART1 | 590911.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.91E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.91E-03 |
| 22 | ALL | UCART1 | 591011.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.96E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 2.96E-03 |
| 23 | ALL | UCART1 | 591111.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.01E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.01E-03 |
| 24 | ALL | UCART1 | 591211.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.06E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.06E-03 |
| 25 | ALL | UCART1 | 591311.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.10E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.10E-03 |

# Chronic Risk (continued)

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1768 | ALL | UCART1 | 593111.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.43E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.43E-02 |
| 1769 | ALL | UCART1 | 593211.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.42E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 | | | | 02 |
| 1770 | ALL | UCART1 | 593311.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.42E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 | | | | 02 |
| 1771 | ALL | UCART1 | 593411.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.42E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 | **Maximum Residential** | | | 02 |
| 1772 | ALL | UCART1 | 593511.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.43E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 | | | | 02 |
| 1773 | ALL | UCART1 | 593611.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.45E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 | | | | 02 |
| 1774 | ALL | UCART1 | 593711.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.47E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 | | | | 02 |
| 1775 | ALL | UCART1 | 593811.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.49E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.49E-02 |
| 1776 | ALL | UCART1 | 593911.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.50E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.50E-02 |
| 1777 | ALL | UCART1 | 594011.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.52E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.52E-02 |
| 1778 | ALL | UCART1 | 594111.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.53E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.53E-02 |
| 1779 | ALL | UCART1 | 594211.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.53E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.53E-02 |
| 1780 | ALL | UCART1 | 594311.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.53E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.53E-02 |
| 1781 | ALL | UCART1 | 594411.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.53E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.53E-02 |
| 1782 | ALL | UCART1 | 594511.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.51E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.51E-02 |
| 1783 | ALL | UCART1 | 594611.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.49E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.49E-02 |
| 1784 | ALL | UCART1 | 594711.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.46E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.46E-02 |
| 1785 | ALL | UCART1 | 594811.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.41E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.41E-02 |
| 1786 | ALL | UCART1 | 594911.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.35E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.35E-02 |
| 1787 | ALL | UCART1 | 595011.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.26E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.26E-02 |
| 1788 | ALL | UCART1 | 595111.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.12E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.12E-02 |
| 1789 | ALL | UCART1 | 595211.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 9.69E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 9.69E-03 |
| 1790 | ALL | UCART1 | 595311.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 8.38E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 8.38E-03 |
| 1791 | ALL | UCART1 | 595411.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 7.28E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 7.28E-03 |
| 1792 | ALL | UCART1 | 595511.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.39E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 6.39E-03 |
| 1793 | ALL | UCART1 | 595611.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.65E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.65E-03 |
| 1794 | ALL | UCART1 | 595711.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.04E-03 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 5.04E-03 |

**COMPASS LAND**
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# Acute Risk

| *HARP - HRACalc v19044 8/19/2022 2:29:43 PM - Acute Risk - Input File: C:\HARP2\Projects\CACHE_HRA\hra\CACHE_HRA_ACUTEHRAInput.hra | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REC | GRP | NETID | X | Y | SCENARIO | CV | CNS | IMMUN | KIDNEY | GILV | REPRO/DE | RESP | SKIN | EYE | BONE/TEE | ENDO | BLOOD | ODOR | GENERAL | MAXHI |
| 1 | ALL | UCART1 | 588911.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 2 | ALL | UCART1 | 589011.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 3 | ALL | UCART1 | 589111.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 4 | ALL | UCART1 | 589211.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 5 | ALL | UCART1 | 589311.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 6 | ALL | UCART1 | 589411.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 7 | ALL | UCART1 | 589511.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 8 | ALL | UCART1 | 589611.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 9 | ALL | UCART1 | 589711.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 10 | ALL | UCART1 | 589811.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 11 | ALL | UCART1 | 589911.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 12 | ALL | UCART1 | 590011.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 13 | ALL | UCART1 | 590111.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 14 | ALL | UCART1 | 590211.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 15 | ALL | UCART1 | 590311.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 16 | ALL | UCART1 | 590411.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 17 | ALL | UCART1 | 590511.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 18 | ALL | UCART1 | 590611.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 19 | ALL | UCART1 | 590711.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 20 | ALL | UCART1 | 590811.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 21 | ALL | UCART1 | 590911.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 22 | ALL | UCART1 | 591011.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 23 | ALL | UCART1 | 591111.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 24 | ALL | UCART1 | 591211.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 25 | ALL | UCART1 | 591311.8 | 4279162 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

# Acute Risk (continued)

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1768 | ALL | UCART1 | 593111.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 1769 | ALL | UCART1 | 593211.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 1770 | ALL | UCART1 | 593311.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 | | | | | |
| 1771 | ALL | UCART1 | 593411.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 | | Maximum | | | |
| 1772 | ALL | UCART1 | 593511.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 | | Residential | | | |
| 1773 | ALL | UCART1 | 593611.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 | | | | | |
| 1774 | ALL | UCART1 | 593711.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 | | | | | |
| 1775 | ALL | UCART1 | 593811.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 | | | | | |
| 1776 | ALL | UCART1 | 593911.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 1777 | ALL | UCART1 | 594011.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 1778 | ALL | UCART1 | 594111.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 1779 | ALL | UCART1 | 594211.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 1780 | ALL | UCART1 | 594311.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 1781 | ALL | UCART1 | 594411.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 1782 | ALL | UCART1 | 594511.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 1783 | ALL | UCART1 | 594611.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 1784 | ALL | UCART1 | 594711.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 1785 | ALL | UCART1 | 594811.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 1786 | ALL | UCART1 | 594911.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 1787 | ALL | UCART1 | 595011.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 1788 | ALL | UCART1 | 595111.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 1789 | ALL | UCART1 | 595211.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 1790 | ALL | UCART1 | 595311.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 1791 | ALL | UCART1 | 595411.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 1792 | ALL | UCART1 | 595511.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 1793 | ALL | UCART1 | 595611.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| 1794 | ALL | UCART1 | 595711.8 | 4281462 | NonCance | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |