Draft Environmental Impact Report

SCH# 2022110504

Volume 3

Appendices A through D.2

BULLHEAD SOLAR PROJECT

by EDF Renewables, LLC (PP22404)

GPA No. 8, Map No. 214; CUP No. 48, Map No. 214; CUP No. 49, Map No. 214; Ag Exclusion Map No. 214; SPA No. 42, Map No. 231; SPA No. 43, Map 231; ZCC No. 158, Map No. 231; CUP No. 121, Map No. 231; CUP No. 122, Map No. 231; Vacation Public Access Easements 03 098 232, Map No. 232; SPA No. 35, Map No. 232; SPA No. 36, Map No. 232; CUP No. 49, Map No. 232; CUP No. 50, Map No. 232.



Kern County Planning and Natural Resources Department Bakersfield, California

November 2023

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Kern County
Planning and Natural Resources Department
Bakersfield, California

Technical Assistance by: PlaceWorks

November 2023

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Appendices - Volume 3

NOTE TO REVIEWER OF ELECTRONIC FILES:

To assist you in reviewing this electronic document, "bookmarks" and/or "links" have been provided for easier navigation between sections. When available, bookmarks are located in the panel to the left. Links are highlighted in BLUE in the Table of Contents. Clicking on either the bookmarks or links will take you to the selected item. This document may consist of multiple linked PDF files. If saving this document to your computer, you must save all corresponding files to a directory on your hard drive to maintain the manner in which these PDF documents are linked.

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Appendix A: **Notice of Preparation**



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Lorelei H. Oviatt, AICP, Director 2700 "M" Street, Suite 100 Bakersfield, CA 93301-2323 Phone: (661) 862-8600 Fax: (661) 862-8601 TTY Relay 1-800-735-2929

Email: planning@kerncounty.com Web Address: http://kernplanning.com/ CALIFORNIA *

PLANNING AND NATURAL RESOURCES DEPARTMENT

Planning
Community Development
Administrative Operations

Date: November 22, 2022

To: See attached Mailing List

FROM: Kern County Planning and Natural

Resources Department Attn: Janice Mayes, Planner III 2700 "M" Street, Suite 100 Bakersfield, CA 93301 (661) 862-8793

mayesi@kerncounty.com

RE: NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT (EIR) FOR THE BULLHEAD SOLAR PROJECT, BY EDF RENEWABLES, LLC (PP22404)

The Kern County Planning and Natural Resources Department, as Lead Agency (pursuant to California Environmental Quality Act [CEQA] Guidelines Section 15052) has determined that preparation of an Environmental Impact Report (EIR) (pursuant to CEQA Guidelines Section 15161) is necessary for the proposed project identified below. The Planning and Natural Resources Department solicits the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities about the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval of the project.

You are invited to view the NOP and Initial Study and submit written comments regarding the scope and content of the environmental information in connection with the proposed project should you wish to do so. Due to limits mandated by State law, your response must be received by **December 23. 2022 at 5:00 p.m.** In addition, comments can also be submitted at a **scoping meeting** that will be held at the Kern County Planning and Natural Resources Department on **December 14. 2022 at 1:30 p.m.** at the address shown above.

PROJECT TITLE: Bullhead Solar Project, By EDF Renewables, LLC; GPA No. 8, Map No. 214; CUP No. 48, Map No. 214; CUP No. 49, Map No. 214; Ag Exclusion Map No. 214; SPA No. 42, Map No. 231; SPA No. 43, Map 231; ZCC No. 158, Map No. 231; CUP No. 121, Map No. 231; CUP No. 122, Map No. 231; Vacation of Public Access Easements 03 098 231, Map No. 231; SPA No. 35, Map No. 232; SPA No. 36, Map No. 232; ZCC No. 36, Map No. 232; CUP No. 49, Map No. 232; CUP No. 50, Map No. 232.

PROJECT LOCATION: The project site is located within the unincorporated area of Kern County, north and south of Dawn Road west of Sierra Hwy 14 between 105th Street West and 75th Street West. The project site is just south of the City of Rosamond and would connect to the Big Beau Solar site via private road. Other communities in the vicinity of the project site include the cities of Lancaster, Palmdale, and Neenach in Los Angeles County, which are roughly 17 miles southeast, 24 miles southeast, and 18 miles southwest of the project, respectively. Edwards Air Force Base is 22 miles east of the project's eastern boundary.

The project site is located on 1,343.2-acres comprised of 21 privately owned parcels in Section 1 of Township 9 North, Range 14 West; Sections 5 and 6 of Township 9 North, Range 13 West; and Sections 31, 32, and 33 of Township 10 North, Range 13W in the San Bernardino Base and Meridian (SBB&M).

PROJECT DESCRIPTION: The Bullhead Solar Project (proposed project) involves the construction and operation of a solar facility and associated infrastructure, including telecommunications towers and internal roads, to generate up to 270 megawatts (MW) of renewable electrical energy with a Battery Energy Storage System capable of storing approximately 270 MW, or 1,080 megawatt-hours (MWh) of energy, within approximately 25 acres of the 1,343.2 acres project site. The project is proposed by EDF Renewable, LLC, and would be developed near the existing Big Beau Solar Project.

Implementation of the project, as proposed, would include:

- Amendments to the Land Use Element of the Willow Springs Specific Plan as follows:
 - Specific Plan Amendment No. 43, Map No. 231 from Map Code 5.3/4.4 (Maximum 10 Units per Net Acre/Comprehensive Planning Area) to Map Code 5.3 (Maximum 10 Units per Net Acre) on approximately 288 acres, and from Map Code 6.2/4.4 (General Commercial/Comprehensive Planning Area) to Map Code 6.2 (General Commercial) on approximately 15 acres; and
 - Specific Plan Amendment No. 35, Map No. 232 from Map Code 5.3/4.4 (Maximum 10 Units per Net Acre/Comprehensive Planning Area) to Map Code 5.3 (Maximum 10 Units per Net Acre) on approximately 160 acres;
- Changes in Zone Classifications as follows:
 - Zone Classification Change No. 158, Map No. 231 from E(5) RS MH FPS (Estate, 5 Acres, Residential Suburban, Mobile Home Combining, Flood Plain Secondary Combining) to A FPS (Exclusive Agriculture, Flood Plain Secondary Combining), or a more restrictive district, on approximately 94 acres and from E(2 ½) RS MH FPS (Estate, 2 ½ Acres, Residential Suburban, Mobilehome Combining, Flood Plain Secondary Combining) district, to A FPS (Exclusive Agriculture, Flood Plain Secondary Combining), or a more restrictive district, on approximately 215.7 acres; and
 - Zone Classification Change No. 36, Map No. 232 from E (5) RS FPS (Estate, 5 Acres, Residential Suburban, Flood Plain Secondary Combining) district on approximately 8.4 acres, and E 2 ½ RS FPS (Estate, 2 ½ Acres, Residential Suburban, Flood Plain Secondary Combining) district on approximately 151.7 acres to A FPS (Exclusive Agriculture, Flood Plain Secondary Combining), or a more restrictive district.
- Conditional Use Permits to allow for the construction and operations of a combined approximate 270 MW solar facility, as well as ancillary structures including an approximate 270 MW battery storage system with up to 1,080 MWh of storage capacity, within the A (Exclusive Agriculture) Zone District pursuant to Section 19.12.030.G of the Kern County Zoning Ordinance (in Zone Maps 214, 231, and 232):
 - o Conditional Use Permit No. 48, Map No. 214 for approximately 842 acres;
 - o Conditional Use Permit No. 121, Map No. 231 for approximately 331 acres; and
 - o Conditional Use Permit No. 50, Map No. 232 for approximately 160 acres
- Conditional Use Permits to allow the construction and operation of a microwave telecommunications tower, within the A (Exclusive Agriculture) Zone District pursuant to Section 19.12.030.f F of the Kern County Zoning Ordinance (in Zone Maps 214, 231, and 232):
 - o Conditional Use Permit No. 49, Map No. 214;
 - Conditional Use Permit NO. 122, Map No. 231; and
 - o Conditional Use Permit No. 49, Map No. 232

- Amendment to the Circulation Element of the Kern County General Plan No. 8, Map No. 214 to remove future road reservations on section and mid-section lines within the project boundaries of Sections 31, 32, and 33 of Township 10 North, Range 13 West, (SBB&M);
- Amendments to the Circulation Element of the Willow Springs Specific Plan as follows:
 - Specific Plan Amendment No. 42, Map No. 231 to remove future road reservations on section and midsection lines within the project boundaries of Section 6, Township 9 North, Range 13 West, SBB&M; and
 - Specific Plan Amendment No. 36, Map No. 232 to remove future road reservations on section lines with the project boundaries of Section 1 of Township 9 North, Range 14 West, SBB&M;
- Petition for Exclusion from the Boundaries from Agricultural Preserve 24, in Zone Map No. 214, for approximately 842 acres of the project site; and
- Non-summary Vacations of various public access easements in Zone Map No. 232, in and around the project site.

Document can be viewed online at: https://kernplanning.com/planning/notices-of-preparation/

Signature

Name: Janice Mayes, Planner III

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BULLHEAD SOLAR
AN: 10/27/22

City of Arvin P.O. Box 548 Arvin, CA 93203 Jo Ellen Alexander P.O. Box 2000 Rosamond, CA 93560

Bakersfield City Planning Dept 1715 Chester Avenue Bakersfield, CA 93301 Bakersfield City Public Works Dept 1501 Truxtun Avenue Bakersfield, CA 93301 California City Planning Dept 21000 Hacienda Blvd. California City, CA 93515

Delano City Planning Dept P.O. Box 3010 Delano, CA 93216 City of Maricopa P.O. Box 548 Maricopa, CA 93252 City of McFarland 401 West Kern Avenue McFarland, CA 93250

City of Ridgecrest 100 West California Avenue Ridgecrest, CA 93555 City of Shafter 336 Pacific Avenue Shafter, CA 93263 City of Taft Planning & Building 209 East Kern Street Taft, CA 93268

City of Tehachapi Attn: John Schlosser 115 South Robinson Street Tehachapi, CA 93561-1722

City of Wasco 764 E Street Wasco, CA 93280 Inyo County Planning Dept P.O. Drawer "L" Independence, CA 93526

Kings County Planning Agency 1400 West Lacey Blvd, Bldg 6 Hanford, CA 93230 Los Angeles Co Reg Planning Dept 320 West Temple Street Los Angeles, CA 90012 San Bernardino Co Planning Dept 385 North Arrowhead Avenue, 1st Floor San Bernardino, CA 92415-0182

San Luis Obispo Co Planning Dept Planning and Building 976 Osos Street San Luis Obispo, CA 93408

Santa Barbara Co Resource Mgt Dept 123 East Anapamu Street Santa Barbara, CA 93101 Tulare County Planning & Dev Dept 5961 South Mooney Boulevard Visalia, CA 93291

Ventura County RMA Planning Div 800 South Victoria Avenue, L1740 Ventura, CA 93009-1740 U.S. Bureau of Land Management Ridgecrest Field Office 300 South Richmond Road Ridgecrest, CA 93555 China Lake Naval Weapons Center Tim Fox, RLA - Comm Plans & Liaison 429 E Bowen, Building 981 Mail Stop 4001 China Lake, CA 93555

Edwards AFB, Mission Sustainability Liaison 412 TW, Bldg 2750, Ste 117-14 195 East Popson Avenue Edwards AFB, CA 93524

U.S. Fish & Wildlife Service 777 East Tahquitz Canyon Way, Suite 208 Palm Springs, CA 92262 Eastern Kern Resource Cons Dist 300 South Richmond Road Ridgecrest, CA 93555-4436

Environmental Protection Agency Region IX Office 75 Hawthorn Street San Francisco, CA 94105

U.S. Dept of Agriculture/NRCS 5080 California Avenue, Ste 150 Bakersfield, CA 93309-0711

U.S. Army Corps of Engineers P.O. Box 997 Lake Isabella, CA 93240 U.S. Army Corps of Engineers U.S. Postal Service State Air Resources Board Regulatory Division Stationary Resource Division Address Management Systems 1325 "J" Street, #1350 P.O. Box 2815 28201 Franklin Parkway Sacramento, CA 95814-2920 Santa Clarita, CA 91383-9321 Sacramento, CA 95812 So. San Joaquin Valley Arch Info Ctr Caltrans/Dist 6 Caltrans/Dist 9 California State University of Bkfd Planning/Land Bank Bldg. Planning Department 9001 Stockdale Highway P.O. Box 12616 500 South Main Street Bakersfield, CA 93311 Fresno, CA 93778 Bishop, CA 93514 State Clearinghouse State Dept of Conservation State Dept of Conservation Director's Office Geologic Energy Management Division Office of Planning and Research 11000 River Run Boulevard 1400 - 10th Street, Room 222 801 "K" Street, MS 24-01 Sacramento, CA 95814 Sacramento, CA 95814-3528 Bakersfield, CA 93311 State Dept of Conservation California State University State Mining and Geology Board Office of Land Conservation Bakersfield - Library 801 K Street, MS 20-15 801 "K" Street, MS 18-01 9001 Stockdale Highway Sacramento, CA 95814 Sacramento, CA 95814 Bakersfield, CA 93309 California Energy Commission James W. Reed, Jr. California Fish & Wildlife State Dept of Food & Agriculture 1516 Ninth Street 1220 "N" Street 1234 East Shaw Avenue Sacramento, CA 95814 Mail Stop 17 Fresno, CA 93710 Sacramento, CA 95814 California Highway Patrol State Office of Historical Pres Integrated Waste Management Planning & Analysis Division Attention Susan Stratton P.O. Box 4025, MS #15 P.O. Box 942898 P.O. Box 942896 Sacramento, CA 95812-4025 Sacramento, CA 94298-0001 Sacramento, CA 95296-0001 State Water Resources Control Board California Regional Water Quality Division of Drinking Water Public Utilities Comm Energy Div Control Board/Lahontan Region Attn: Jesse Dhaliwal, Sr. Sanitary Eng 505 Van Ness Avenue 15095 Amargosa Road - Bld 2, Suite 210 4925 Commerce Drive, Suite 120 San Francisco, CA 94102 Victorville, CA 92392 Bakersfield, CA 93309 Cal Environmental Protection Agency/ State Dept of Toxic Substance Control Dept of Toxic Substances Control, Reg 1 **State Lands Commission Environmental Protection Agency** 100 Howe Avenue, Ste 100-South Attn: Dave Kereazis, Permit Div - CEQA 1515 Tollhouse Road 8800 Cal Center Drive, 2nd Floor Sacramento, CA 95825-8202 Clovis, CA 93612 Sacramento, CA 95826 State Dept of Water Resources Kern County San Joaquin Dist. Kern County Administrative Officer 3374 East Shields Avenue, Room A-7 Agriculture Department Fresno, CA 93726

Kern County Public Works Department/ Building & Development/Floodplain

Kern County Public Works Department/ Building & Development/Survey Kern County Env Health Services Department Kern County Fire Dept (Put in FIRE BOX) Regina Arriaga Roxanne Routh Jim Killam

Kern County Fire Dept Cary Wright, Fire Marshall Kern County Library/Beale Local History Room

Kern County Library/Beale Andie Sullivan Kern County Library Mojave Branch 16916 1/2 Highway 14, Space D2 Mojave, CA 93501

Kern County Museum 3801 Chester Avenue Bakersfield, CA 93301

Kern County Parks & Recreation

Kern County Sheriff's Dept Administration Kern County Public Works Department/ Building & Development/Development Review

Kern County Public Works
Department/Operations &
Maintenance/Regulatory Monitoring &
Reporting

Kern County Public Works Department/ Building & Development/Code Compliance Rosamond Municipal Advisory Council P.O. Box 626 Rosamond, CA 93560

Mojave Town Council Bill Deaver, President P.O. Box 1113 Mojave, CA 93502-1113

Southern Kern Unified School Dist P.O. Box CC Rosamond, CA 93560 Kern County Superintendent of Schools Attention School District Facility Services 1300 - 17th Street Bakersfield, CA 93301

KernCOG 1401 19th Street - Suite 300 Bakersfield, CA 93301 Local Agency Formation Comm/LAFCO 5300 Lennox Avenue, Suite 303 Bakersfield, CA 93309

Kern County Water Agency 3200 Rio Mirada Drive Bakersfield, CA 93308

East Kern Air Pollution Control District Antelope Valley-East Kern Water Agency 6500 West Avenue N Palmdale, CA 93551 Adams, Broadwell, Joseph & Cardozo Attention: Janet M. Laurain 601 Gateway Boulevard, Suite 1000 South San Francisco, CA 94080

U.S. Air Force Attn: David Bell/AFCEC CZPW Western Regional/Leg Branch 510 Hickam Avenue, Bld 250-A Travis AFD, CA 94535-2729 U.S. Army Attn: Philip Crosbie, Chief Strategic Plans, S3, NTC P.O. Box 10172 Fort Irwin, CA 92310 U.S. Army Attn: Tim Kilgannon, Reg 9 Coord Office of Strategic Integration 721 - 19th Street, Room 427 Denver, CO 80202

U.S. Navy Attn: Steve Chung, Plans & Liaison Officer 1220 Pacific Highway San Diego, CA 92132-5190 U.S. Marine Corps Command Gen MCIWEST-MCB CamPen Attn: A/CS, G7 Box 555010, Bldg 1160, Rm 280 Camp Pendleton, CA 92055-5246

AT&T California OSP Engineering/Right-of-Way 4901 Ashe Road Bakersfield, CA 93313

Kern Audubon Society Attn: Frank Bedard, Chairman 4124 Chardonnay Drive Bakersfield, CA 93306

Los Angeles Audubon 926 Citrus Avenue Los Angeles, CA 90036-4929 Center on Race, Poverty & the Environment Attn: Marissa Alexander 1999 Harrison Street – Suite 650 San Francisco, CA 94612 Center on Race, Poverty & the Environmental/ CA Rural Legal Assistance Foundation 1012 Jefferson Street Delano, CA 93215

Mojave Chamber of Commerce P.O. Box 935 Mojave, CA 93502

Southern California Edison P.O. Box 410 Long Beach, CA 90801

Southern California Gas Co 35118 McMurtrey Avenue Bakersfield, CA 93308-9477

David Laughing Horse Robinson P.O. Box 20849 Bakersfield, CA 93390

Santa Rosa Rancheria Ruben Barrios, Chairperson P.O. Box 8 Lemoore, CA 93245

Tubatulabals of Kern County Attn: Robert Gomez, Chairperson P.O. Box 226 Lake Isabella, CA 93240

Eight Bar Ranch Jon and Helen Lantz 11300 Cameron Canyon Road Mojave, CA 93501

Leadership Counsel for Justice & Accountability 1527 - 19th Street, Suite 212 Bakersfield, CA 93301

Vestas 1417 NW Everett Street Portland, OR 97209 Defenders of Wildlife/ Kim Delfino, California Dir 980 - 9th Street, Suite 1730 Sacramento, CA 95814

Native American Heritage Council of Kern County Attn: Gene Albitre 3401 Aslin Street Bakersfield, CA 93312

Southern California Edison 2244 Walnut Grove, Ave, GO-1 Quad 2C Rosemead, CA 91770

Southern California Gas Co Transportation Dept 9400 Oakdale Avenue Chatsworth, CA 91313-6511

Kern Valley Indian Council Attn: Robert Robinson, Chairperson P.O. Box 401 Weldon, CA 93283

Tejon Indian Tribe Kathy Morgan, Chairperson 1731 Hasti-acres Drive, Suite 108 Bakersfield, CA 93309

Tule River Indian Tribe Neal Peyron, Chairperson P.O. Box 589 Porterville, CA 93258

Fairmont Town Council Attn: Barbara Rogers P.O. Box 2320 Rosamond, CA 93560

LIUNA Attn: Danny Zaragoza 2201 "H" Street Bakersfield, CA 93301

Southern California Edison Planning Dept. 510 S. China Lake Blvd. Ridgecrest, CA 93555 California Farm Bureau 2300 River Plaza Drive, NRED Sacramento, CA 95833

Sierra Club/Kern Kaweah Chapter P.O. Box 3357 Bakersfield, CA 93385

Southern California Edison **DUP** 2244 Walnut Grove, Ave, GO-1 Quad 2C Rosemead, CA 91770

Chumash Council of Bakersfield 2421 "O" Street Bakersfield, CA 93301-2441

Kern Valley Indian Council Historic Preservation Office P.O. Box 401 Weldon, CA 93283

Kitanemuk & Yowlumne Tejon Indians Chairperson 115 Radio Street Bakersfield, CA 93305

Matthew Gorman The Gorman Law Firm 1346 E. Walnut Street, Suite 220 Pasadena, CA 91106

Joyce LoBasso P.O. Box 6003 Bakersfield, CA 93386

Mojave Foundation Attn: Todd Quelet 16922 Airport Boulevard Mojave, CA 93501

Southern California Edison Planning Dept. 421 West "J" Street Tehachapi, CA 93561 Steve Yatsko Terra-Gen Power 11512 El Camino Real Suite 100 San Diego, CA 92130

Lozeau Drury, LLP 410 12th Street Suite 250 Oakland, CA 94607 Center for Biological Diversity 351 California Street #600 San Francisco, CA 94104

Sierra Club Beyond Coal Campaign 1417 Calumet Ave Los Angeles, CA 90026 Lorelei H. Oviatt, AICP, Director

2700 "M" Street, Suite 100 Bakersfield, CA 93301-2323 Phone: (661) 862-8600

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PLANNING AND NATURAL RESOURCES DEPARTMENT

Planning
Community Development
Administrative Operations

DATE: November 22, 2022

TO: Surrounding Property Owners within FRO

1,000 Feet of Project Boundary; and,

Interested Parties

FROM: Kern County Planning and Natural

Resources Department Janice Mayes, Planner III 2700 "M" Street, Suite 100 Bakersfield, CA 93301

RE: Notice of Preparation of an Environmental Impact Report - Bullhead Solar, LLC/EDF

Renewables Development, Inc. (PP22404)

Dear Sir or Madam:

The Kern County Planning and Natural Resources Department has determined that preparation of an Environmental Impact Report (EIR) is necessary for the project identified below. The purpose of this letter is to notify surrounding property owners within 1,000 feet of the project boundaries of this determination. A copy of the Notice of Preparation/Initial Study (NOP/IS) prepared for this project is available for viewing at the following Kern County website: https://kernplanning.com/planning/notices-of-preparation/.

The NOP is also available for review at the Planning and Natural Resources Department, located at 2700 "M" Street, Suite 100, Bakersfield, CA 93301. The purpose of the NOP is to describe the proposed project, specify the project location, and to identify the potential environmental impacts of the project so that Responsible Agencies and interested persons can provide a meaningful response related to potential environmental concerns that should be analyzed in the Environmental Impact Report.

You are invited to view the NOP/IS and submit written comments regarding this project should you wish to do so. Due to the limits mandated by State law, your response must be received by <u>December 23, 2022 at 5pm.</u> Your comments can also be submitted at a scoping meeting that will be held at the Kern County Planning and Natural Resources Department on **December 14, 2022 at 1:30pm** at the address shown above.

Please be advised that any comments received after the dates listed above will still be included in the public record for this project and made available to decision makers when this project is scheduled for consideration at a public hearing. Please also be advised that you will receive an additional notice in the mail once a public hearing date is scheduled for this project. You will also be provided additional opportunities to submit comments at that time.

PROJECT TITLE: Bullhead Solar Project, By EDF Renewables, LLC; GPA No. 8, Map No. 214; CUP No. 48, Map No. 214; CUP No. 49, Map No. 214; Ag Exclusion Map No. 214; SPA No. 42, Map No. 231; SPA No. 43, Map 231; ZCC No. 158, Map No. 231; CUP No. 121, Map No. 231; CUP No. 122, Map No. 231; Vacation of Public Access Easements 03 098 231, Map No. 231; SPA No. 35, Map No. 232; SPA No. 36, Map No. 232; ZCC No. 36, Map No. 232; CUP No. 49, Map No. 232; CUP No. 50, Map No. 232.

PROJECT LOCATION: The project site is located within the unincorporated area of Kern County, north and south of Dawn Road off Sierra Hwy 14 between 105th Street West and 75th Street West. The project site is just south of the City of Rosamond and would connect to the Big Beau Solar site via private road. Other communities in the vicinity of the project site include the cities of Lancaster, Palmdale, and Neenach in Los

Angeles County, which are roughly 17 miles southeast, 24 miles southeast, and 18 miles southwest of the project, respectively. Edwards Air Force Base is 22 miles east of the project's eastern boundary.

The project site is located on approximately 1,343 acres and is comprised of 22 privately owned parcels in Section 1 of Township 9 North, Range 14 West; Sections 5 and 6 of Township 9 North, Range 13 West; and Sections 31, 32, and 33 of Township 10 North, Range 13W in the San Bernardino Base and Meridian (SBB&M).

PROJECT DESCRIPTION: The Bullhead Solar Project (proposed project) involves the construction and operation of a solar facility and associated infrastructure, including telecommunications towers and internal roads, to generate up to 270 megawatts (MW) of renewable electrical energy with a Battery Energy Storage System capable of storing approximately 270 MW, or 1,080 megawatt-hours (MWh) of energy, within the approximately 25 acres of the project site. The project is proposed by EDF Renewable, LLC, and would be developed near the existing Big Beau Solar Project.

Implementation of the project as proposed includes the following requests:

- Amendments to the Land Use Element of the Willow Springs Specific Plan as follows:
 - Specific Plan Amendment No. 43, Map No. 231 from Map Code 5.3/4.4 (Maximum 10 Units per Net Acre/Comprehensive Planning Area) to Map Code 5.3 (Maximum 10 Units per Net Acre) on approximately 288 acres, and from Map Code 6.2/4.4 (General Commercial/Comprehensive Planning Area) to Map Code 6.2 (General Commercial) on approximately 15 acres; and
 - O Specific Plan Amendment No. 35, Map No. 232 from Map Code 5.3/4.4 (Maximum 10 Units per Net Acre/Comprehensive Planning Area) to Map Code 5.3 (Maximum 10 Units per Net Acre) on approximately 160 acres;
- Changes in Zone Classifications as follows:
 - O Zone Classification Change No. 158, Map No. 231 from E(5) RS MH FPS (Estate, 5 Acres, Residential Suburban, Mobile Home Combining, Flood Plain Secondary Combining) to A FPS (Exclusive Agriculture, Flood Plain Secondary Combining), or a more restrictive district, on approximately 115 acres and from E(2 ½) RS MH FPS (Estate, 2 ½ Acres, Residential Suburban, Mobilehome Combining, Flood Plain Secondary Combining) district, to A FPS (Exclusive Agriculture, Flood Plain Secondary Combining), or a more restrictive district, on approximately 215.7 acres; and
 - O Zone Classification Change No. 36, Map No. 232 from E (5) RS FPS (Estate, 5 Acres, Residential Suburban, Flood Plain Secondary Combining) district on approximately 8.4 acres, and E 2 ½ RS FPS (Estate, 2 ½ Acres, Residential Suburban, Flood Plain Secondary Combining) district on approximately 151.7 acres to A FPS (Exclusive Agriculture, Flood Plain Secondary Combining), or a more restrictive district.
- Conditional Use Permits to allow for the construction and operations of a combined approximate 270 MW solar facility, as well as ancillary structures including an approximate 270 MW battery storage system with up to 1,080 MWh of storage capacity, within the A (Exclusive Agriculture) Zone District pursuant to Section 19.12.030.G of the Kern County Zoning Ordinance (in Zone Maps 214, 231, and 232):
 - o Conditional Use Permit No. 48, Map No. 214 for approximately 842 acres;
 - o Conditional Use Permit No. 121, Map No. 231 for approximately 331 acres; and
 - o Conditional Use Permit No. 50, Map No. 232 for approximately 160 acres

- Conditional Use Permits to allow the construction and operation of a microwave telecommunications tower, within the A (Exclusive Agriculture) Zone District pursuant to Section 19.12.030.f F of the Kern County Zoning Ordinance (in Zone Maps 214, 231, and 232):
 - o Conditional Use Permit No. 49, Map No. 214;
 - o Conditional Use Permit No. 122, Map No. 231; and
 - o Conditional Use Permit No. 50, Map No. 232
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- Amendments to the Circulation Element of the Willow Springs Specific Plan as follows:
 - Specific Plan Amendment No. 42, Map No. 231 to remove future road reservations on section and mid-section lines within the project boundaries of Section 6, Township 9 North, Range 13 West, SBB&M; and
 - Specific Plan Amendment No. 36, Map No. 232 to remove future road reservations on section lines with the project boundaries of Section 1 of Township 9 North, Range 14 West, SBB&M;
- Petition for Exclusion from the Boundaries from Agricultural Preserve 24, in Zone Map No. 214, for approximately 842 acres of the project site; and
- Nonsummary Vacations of various public access easements in Zone Map No. 232, in and around the project site.

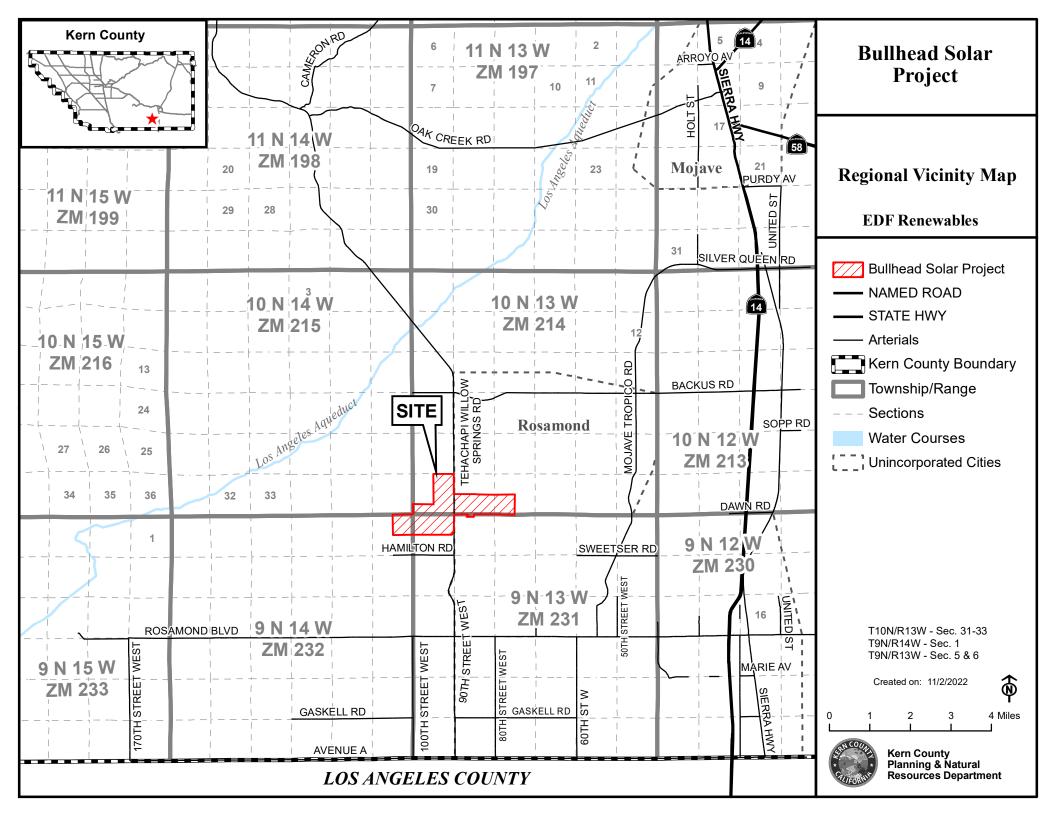
Document can be viewed online at: https://kernplanning.com/planning/notices-of-preparation/

Should you have any questions regarding this project, or the Notice of Preparation, please feel free to contact me at (661) 862-8793 or mayesj@kerncounty.com

Sincerely,

Janice Mayes, Planner III Advanced Planning Division

Attachment: Vicinity Map showing project boundary



I:\Planning\WORKGRPS\WP\LABELS \BULLHEAD SOLAR.docx BULLHEAD SOLAR AN: 10/27/22

315 030 02 00 0 AIM DEVELOPMENTS LLC 4000 MACARTHUR BL STE 600 NEWPORT BEACH CA 92660

474 120 17 00 0 BARCUS B B 5616 45TH AV S W SEATTLE WA 98116

315 230 02 00 8 BLACK LIVING TRUST 13590 N NIGHTSTAR CT MARANA AZ 85653

315 040 12 00 2 BONALES VERONICA PO BOX 1326 FERNDALE CA 95536-1326

315 050 25 00 3 BURTON GARY EDWARD O 3200 BERRY HOLW MELISSA TX 75454-3032

315 060 02 00 9 CANON FERNANDO B 16902 MARINABAY DR HUNTINGTON BCH CA 92649-2916

346 240 27 00 0 **DUP**CENTURY DEVELOPMENT CORP
P O BOX 7076
EDMOND OK 73083

315 050 44 00 8 CITY OF LOS ANGELES D W P 111 N HOPE ST RM 340 LOS ANGELES CA 90012-2607

315 050 38 00 1 CORONA EZEQUIEL 8715 FAVORITO AV ROSAMOND CA 93560 315 050 14 00 1 AGBAYANI ELMER & CRISTINA REV TRUST 1554 HILLMONT AV SAN JOSE CA 95127-4521

346 371 03 00 5 ALTMAN LIVING TRUST 22330 ANDERMATT DR TEHACHAPI CA 93561

474 120 39 00 4 BAYNOSA RODOLFO B & LUZ C TR 1873 BERRY HILL DR CHINO HILLS CA 91709-4897

346 363 07 00 8 BLUE CUBE VENTURE LLC 13089 PEYTON DR C473 CHINO HILLS CA 91709

315 011 50 00 0 BORUCHIN JOHN & DORA LIV TRUST 42 E 69TH ST NEW YORK NY 10021-5093

315 050 24 00 0 BURTON LESLIE JEAN CAMPBELL TRUST 5401 NE 197TH ST APT B LAKE FOREST PRK WA 98155

346 373 03 00 9 CANONES RONITO A & CRISTETA ET AL 26486 JEAN BAPTISTE WY MORENO VALLEY CA 92555-2543

315 050 28 00 2 CITY OF LOS ANGELES D W P P O BOX 51111 RM 633 LOS ANGELES CA 90051-0100

346 032 52 00 5 CITY OF LOS ANGELES D W P 111 N HOPE ST LOS ANGELES CA 90012

474 120 06 01 7 COSTELLO FMLY LIV TR 100 HILLCREST LN KENTFIELD CA 94904 474 120 04 00 2 AHMAD BASHIR 1148 HERMINA ST MILPITAS CA 95035-3003

346 032 55 00 4 AURORA SOLAR LLC 1125 NW COUCH ST STE 700 PORTLAND OR 97209-4129

358 051 18 00 3 BEEMAN HARRY LELAND 4448 STUMBERG LN BATON ROUGE LA 70816-6523

474 120 11 00 2 BLYDENBURG ALAN C & DEBRA L PO BOX 56867 SHERMAN OAKS CA 91413-1867

346 032 48 00 4 BROSIUS SCOTT EVERETT 2105 MAIN ST SANTA MONICA CA 90405-2215

315 050 23 00 7 **DUP**CAMPBELL LESLIE JEAN
REVOCABLE TRUST
5401 NE 197TH ST APT B
LAKE FOREST PRK WA 98155

346 240 37 00 9 CENTURY DEV CORP P O BOX 7076 EDMOND OK 73083

315 050 35 00 2 CITY OF LOS ANGELES D W P PO BOX 51111 # 1031 LOS ANGELES CA 90051-5700

346 372 01 00 6 COLMENAR FMLY TR 2825 ORO BLANCO CI ESCONDIDO CA 92027-5257

346 031 08 00 1 CRYSTAL ORGANIC FARMS LLC P O BOX 81498 BAKERSFIELD CA 93380 346 363 05 00 2 346 240 41 00 0 358 051 08 00 4 CUDAL MARCELINO M & ZENAIDA V CUMMINGS CHARLES D & LINDA G D A REALTY TRUST **TRUST** P O BOX 7076 HCR 3 BOX 226 757 SANDY HOOK AV ROSAMOND CA 93560 **EDMOND OK 73083** LA PUENTE CA 91744-2656 358 051 14 00 1 346 361 02 00 9 346 363 06 00 5 DAGEFORDE TRUST DE LOS SANTOS FAMILY TRUST DL INVESTORS 1 LLC 166 W WASHINGTON ST STE 730 16804 NE 10TH WY 1316 ARABIC ST VANCOUVER WA 98684-6424 WILMINGTON CA 90744-4904 CHICAGO IL 60602 474 120 37 00 8 **DUP** 315 011 01 00 8 346 240 30 00 8 EDF RENEWABLES DEVELOPMENT EDF RENEWABLES DEV INC ESQUER VICTOR J INC 15445 INNOVATION DR 1368 CERRITOS CT 15445 INNOVATION DR SAN DIEGO CA 92128 CHULA VISTA CA 91910-7106 SAN DIEGO CA 92128 358 051 17 00 0 346 240 28 00 3 315 050 36 00 5 EVERETTE SUZANNE E FOX THOMAS R LIVING TRUST GABRIEL LAND CO PO BOX 50 2288 OLD TRACY RD 1022 SELBY AV LAKE ARROWHEAD CA 92352-0050 **MOUNTAIN HOME AR 72653** LOS ANGELES CA 90024 315 040 04 00 9 346 240 26 00 7 358 052 03 00 6 GLENN MARILYN R GM GABRYCH FAMILY L P **GOMEZ AMADO** 2006 OLD HIGHWAY 395 40701 RANCHO VISTA BL SP 256 5334 CAMELLIA AV **SACRAMENTO CA 95819-1716** FALLBROOK CA 92028-8816 PALMDALE CA 93551-2713 315 011 18 00 8 315 050 41 00 9 **DUP** 358 052 05 00 2 GRIFFIN LEONARD W & LAURA GRIFFIN LEONARD W & LAURA GUERRERO RODOLFO GAMINO SURVIVORS TRUST SURVIVORS TRUST 10057 HAMILTON RD 48009 70TH ST E 48009 EAST 70TH STREET ROSAMOND CA 93560-6931 LANCASTER CA 93535 LANCASTER CA 93534 315 230 07 00 3 346 363 02 00 3 346 240 31 00 1 HAAG ROBERT W SR & SCHMID HIATT FREDERICK H & GERALDINE HAMILTON P A & MURRAY HELEN T **TRUST TAMARA** 343 W PALM AV APT 5 5491 TEHACHAPI WILLOW SP RD 12757 TREE RANCH RD EL CAJON CA 92020 ROSAMOND CA 93560-7504 **OJAI CA 93023** 315 030 10 00 3 315 050 43 00 5 346 240 36 00 6 HNF INTERNAT INC IRA SERVICES, TRUST CO KARIM RAHIM 22 COLLETON RIVER DR P O BOX 7080 6358 POINT ISABEL WY HENDERSON NV 89052-6646 LAS VEGAS NV 89122-7662 SAN CARLOS CA 94070-7080 346 371 06 00 4 315 050 22 00 4 358 051 43 00 5 KETTLES HARRIET LIVING TRUST KAWASHIMA FRANK T & BETTY S KIMARI HENRY N & KELLY A 1215 E NORWOOD PL. 1016 EDWARDS PL 843 MOUNTAIN VIEW RD

315 050 37 00 8 **DUP** 315 050 39 00 4 315 230 01 00 5 L A CITY OF L A CITY OF L A CITY OF PO BOX 51111 # 1031 PO BOX 51111 PO BOX 51111 PO BOX 51111 RM 1031 LOS ANGELES CA 90051-5700 LOS ANGELES CA 90051-0100 LOS ANGELES CA 90051-5700

CORDOVA AL 35550-4019

DUP

LOMPOC CA 93436-3416

ALHAMBRA CA 91801

346 372 02 00 9 474 120 45 00 1 358 052 01 00 0 LAMBE DONALD S & NORA S LANDSGAARD OLAF LAPIS LAND CO LLC P O BOX 81498 1671 W NINE ONE HALF MILE RD P O BOX 2567 CANTONMENT FL 32533-7704 ROSAMOND CA 93560-6420 BAKERSFIELD CA 93380-1498 346 372 03 00 2 474 120 41 00 9 315 040 05 00 2 LAYGO ARMANDO L LE ME VAN & NGUYEN SEN THI LOMBARDI IDA C REV TRUST 19 LOS FELIS DR 4609 LA CRESCENT LP 2201 SACRAMENTO ST STE 403 POMONA CA 91766 SAN JOSE CA 95136-2686 SAN FRANCISCO CA 94115-2314 346 240 06 00 9 315 050 42 00 2 346 363 04 00 9 MANNIKUS ERLINDA & YENKO LOS ANGELES CITY OF MAGALING BENITO B & EVELYN M EMMA ET AL PO BOX 51111 RM 1031 323 WILLITS ST 10 PIKEVIEW TERR LOS ANGELES CA 90051-0100 DALY CITY CA 94014-1931 SECAUCUS NJ 07094 346 363 11 00 9 346 032 26 00 0 358 051 10 00 9 MARLETT MARK MARTINEZ JULIO O & LUCIANA A MC INTOSH TED A 1117 SW WAY THRU THE WOODS 2813 GREEN MOUNTAIN LN 8608 E 268TH AV **DECATUR AL 35603-1268** ESCONDIDO CA 92025-7549 BUCKLEY WA 98321-9295 315 050 15 00 4 315 050 12 00 5 346 240 07 00 2 MOORISH SCIENCE TEMPLE OF MONTGOMERY PAUL H OH ALEX S & SEONG H **AMER** 1629 CYRENE DR 19551 RINALDI ST U 24 815 N LA BREA AV 153 CARSON CA 90746 PORTER RANCH CA 91326-1687 **INGLEWOOD CA 90302** 346 250 01 00 7 315 040 11 00 9 358 052 08 00 1 OPEN SP HOME OWNERS ASSC #4 ORTEGA ISMAEL & EMELDA PADILLA LUZVIMINDA V 12521 WINGO ST P O BOX 20010 3633 KIM CT ENCINO CA 91416 PACOIMA CA 91331 LANCASTER CA 93536 315 050 33 00 6 474 120 13 00 8 315 011 48 00 5 PETERSON WESLEY A PHAN FON & WONG DIANA PARADA RAYMOND J TRUST P O BOX 10520 P O BOX 2249 PO BOX 290983 PRESCOTT AZ 86304 MESA AZ 85214 PHELAN CA 92329-0983 315 050 40 00 6 358 051 09 00 7 315 040 02 00 3 PRESSMAN BARRY K REVOCABLE **QUEALY JESSICA** RINARD JOAN GIGNAC TRUST **TRUST** 5527 105TH ST W 2738 N KEYSTONE ST 2261 MONACO DR WILLOW SPRINGS CA 93560-7500 **BURBANK CA 91504** OXNARD CA 93035-2915 315 050 16 00 7 346 363 03 00 6 358 051 13 00 8 ROBINSON ROGER WARREN & RODIL AUREA T ROMERO ULICES JAVIER TORRES SYLVA IRENE TRUST 136-08 68 DR APT A 23450 NEWHALL AV SP 26

 358 052 04 00 9
 358 051 15 00 4

 RUTKOWSKI BARBARA J
 RYAN FAMILY REVOCABLE TRUST

 11705 SCENIC HILLS BL
 10568 MOUNTAIN BROW RD

 HUDSON FL 34667-5619
 SONORA CA 95370-8015

FLUSHING NY 11367

1450 W IVYTON ST

LANCASTER CA 93534-2115

346 031 07 00 8 SCHIFF MARK AKIRA 20553 GALLOWAY DR SANTA CLARITA CA 91350

NEWHALL CA 91321

358 051 04 00 2 SEGAL MICHAEL & BRENDA 1426 STATE HIGHWAY 58 MOJAVE CA 93501-1961

346 371 07 00 7 SIMS BENNIE G SR & CHERYL L 9601 LOMITA CT APT 222 ALTA LOMA CA 91701

DUP

346 240 24 00 1 TAMAYO TRUST 1279 N REEDER AV COVINA CA 91724-1623

358 051 11 00 2 TIDWELL PATRICIA A 4568 HALE AV LA VERNE CA 91750-2531

358 052 09 00 4 US SOLAR ASSETS LLC 135 MAIN ST FLR 6 SAN FRANCISCO CA 94105-8113

315 060 01 00 6 WEBB KIRK LIVING TRUST 1308 ABBOT AV SAN GABRIEL CA 91776-3216

315 050 02 00 6 WILLEY FAMILY TRUST 5792 TEHACHAPI WILLOW SPG RD ROSAMOND CA 93560

474 120 12 00 5 YOUNG JASON 6195 105TH ST WEST ROSAMOND CA 93560 358 051 05 00 5 **DUP** SEGAL MICHAEL & BRENDA 1426 HIGHWAY 58 MOJAVE CA 93501

346 371 08 00 0 SORIANO FRANDEROOSE C & OLIVIA C 19940 ROYAL AV HAYWARD CA 94541-3652

346 363 10 00 6 TERRADO VIRGELIA G 363 KAHA ST KAILUA HI 96734

346 240 10 00 0 TIEN FMLY TR 6571 BROWNSTONE PL RANCHO CUCAMONG CA 91739-2011

346 363 12 00 2 VEAL IRREVOCABLE TRUST 8861 MONTROSE AV WESTMINSTER CA 92683-5448

346 240 32 00 4 WELCH SHERI 37715 38TH AVE S AUBURN WA 98001-8749

346 240 17 00 1 WOODCLIFF INC 19313 STARLIGHT DR TARZANA CA 91356

346 361 01 00 6 ADVMINVESTMENTS LLC 1369 ALLENFORD AV LOS ANGELES CA 90049 358 051 06 00 8 SEGAL MICHAEL & BRENDA TRUST 1426 STATE HIGHWAY 58

346 240 19 00 7 TAMAYO 2014 TRUST 1279 N REEDER AV COVINA CA 91724-1623

MOJAVE CA 93501-1961

358 051 12 00 5 TIDWELL DERRIL W & PATRICIA A 4568 HALE AV LA VERNE CA 91750-2531

315 040 03 00 6 TORRES PABLO & ROMERO MAGDALENA PEREZ 23450 NEWHALL AV SP 70 NEWHALL CA 91321

346 361 03 00 2 VICTORIA LUZ B ET AL 2425 WOODLEY AV LAKELAND FL 33803

346 031 05 00 2 WESTN NATURAL RESOURCES LLC 11455 EL CAMINO REAL STE 160 SAN DIEGO CA 92130

474 120 38 00 1 YOON YANG SUB & KUM SOOK TRUST 11723 COORSGOLD LN NORTHRIDGE CA 91326

Notice of Completion & Environmental Document Transmittal

Project Title:		
Lead Agency:		
Mailing Address:	Phone:	
City:	Zip: County:	
Project Location: County:		
Cross Streets:		Zip Code:
Longitude/Latitude (degrees, minutes and seconds):°		
Assessor's Parcel No.:		
Within 2 Miles: State Hwy #:	Waterways:	
Airports:	Railways: Scho	ools:
Document Type:	NEDA DINOT OF	
CEQA: NOP Draft EIR	NEPA: NOI Other:	Joint Document
☐ Early Cons ☐ Supplement/Subsequent EI		Final Document
☐ Neg Dec (Prior SCH No.)	Draft EIS FONSI	Other:
Mit Neg Dec Other:	L FONSI	
Local Action Type:		
General Plan Update Specific Plan	Rezone	☐ Annexation
General Plan Amendment Master Plan	Prezone	Redevelopment
General Plan Element Planned Unit Developme	—	Coastal Permit
Community Plan Site Plan	Land Division (Subdivision, etc.)	
Development Type:		
Residential: Units Acres		
Office: Sq.ft. Acres Employees_	Transportation: Type	
Commercial:Sq.ft Acres Employees_		
Industrial: Sq.ft. Acres Employees		MW
Educational:		MGD
Recreational:	Hazardous Waste:Type	
Water Facilities: Type MGD	Other:	
Project Issues Discussed in Document:		
Aesthetic/Visual Fiscal	Recreation/Parks	Vegetation
Agricultural Land Flood Plain/Flooding	Schools/Universities	Water Quality
Air Quality Forest Land/Fire Hazard	Septic Systems	Water Supply/Groundwater
Archeological/Historical Geologic/Seismic	Sewer Capacity	Wetland/Riparian
☐ Biological Resources ☐ Minerals ☐ Coastal Zone ☐ Noise	☐ Soil Erosion/Compaction/Grading ☐ Solid Waste	Growth Inducement
☐ Coastal Zone ☐ Noise ☐ Drainage/Absorption ☐ Population/Housing Balar		☐ Land Use☐ Cumulative Effects
☐ Drainage/Absorption ☐ Population/Housing Balan ☐ Economic/Jobs ☐ Public Services/Facilities		Other:
	Harric/Circulation	

Project Description: (please use a separate page if necessary)

The Bullhead Solar is a proposed project photovoltaic (PV) solar facility with associated infrastructure on approximately 1,343.2 acres of privately-owned land in southeastern Kern County. As stated above, the proposed project would generate up to 270 MW of renewable electrical energy with a battery energy storage system (BESS) capable of storing approximately 270 MW, or 1,080 MWh of storage capacity. The proposed project includes the installation of solar development with associated PV panels, battery storage, inverters, converters, generators, foundations, transformers, and preferred and optional generation-tie (gen-tie) routes to the Rosamond and Whirlwind Substations, only one of which would be constructed. The project also includes laydown yards, a meteorological station, a microwave/communication tower, and a substation.

Implementation of the project as proposed includes the following requests:

- Amendments to the Land Use Element of the Willow Springs Specific Plan as follows:
 - o Specific Plan Amendment No. 43, Map No. 231 from Map Code 5.3/4.4 (Maximum 10 Units per Net Acre/Comprehensive Planning Area) to Map Code 5.3 (Maximum 10 Units per Net Acre) on approximately 288 acres, and from Map Code 6.2/4.4 (General Commercial/Comprehensive Planning Area) to Map Code 6.2 (General Commercial) on approximately 15 acres; and
 - Specific Plan Amendment No. 35, Map No. 232 from Map Code 5.3/4.4 (Maximum 10 Units per Net Acre/Comprehensive Planning Area) to Map Code 5.3 (Maximum 10 Units per Net Acre) on approximately 160 acres;
- Changes in Zone Classifications as follows:
 - o Zone Classification Change No. 158, Map No. 231 from E(5) RS MH FPS (Estate, 5 Acres, Residential Suburban, Mobile Home Combining, Flood Plain Secondary Combining) to A FPS (Exclusive Agriculture, Flood Plain Secondary Combining), or a more restrictive district, on approximately 94 acres and from E(2 ½) RS MH FPS (Estate, 2 ½ Acres, Residential Suburban, Mobilehome Combining, Flood Plain Secondary Combining) district, to A FPS (Exclusive Agriculture, Flood Plain Secondary Combining), or a more restrictive district, on approximately 215.7 acres; and
 - o Zone Classification Change No. 36, Map No. 232 from E (5) RS FPS (Estate, 5 Acres, Residential Suburban, Flood Plain Secondary Combining) district on approximately 8.4 acres, and E 2 ½ RS FPS (Estate, 2 ½ Acres, Residential Suburban, Flood Plain Secondary Combining) district on approximately 151.7 acres to A FPS (Exclusive Agriculture, Flood Plain Secondary Combining), or a more restrictive district
- Conditional Use Permits to allow for the construction and operations of a combined approximate 270 MW solar facility, as well as ancillary structures including an approximate 270 MW battery storage system with up to 1,080 MWh of storage capacity, within the A (Exclusive Agriculture) Zone District pursuant to Section 19.12.030.G of the Kern County Zoning Ordinance (in Zone Maps 214, 231, and 232):
 - Conditional Use Permit No. 48, Map No. 214 for approximately 842 acres;
 - o Conditional Use Permit No. 121, Map No. 231 for approximately 331 acres; and
 - Conditional Use Permit No. 50, Map No. 232 for approximately 160 acres
- Conditional Use Permits to allow the construction and operation of a microwave telecommunications tower, within the A (Exclusive Agriculture) Zone
 District pursuant to Section 19.12.030.f F of the Kern County Zoning Ordinance (in Zone Maps 214, 231, and 232):
 - o Conditional Use Permit No. 49, Map No. 214;
 - o Conditional Use Permit NO. 122, Map No. 231; and
 - o Conditional Use Permit No. 49, Map No. 232
- Amendment to the Circulation Element of the Kern County General Plan No. 8, Map No. 214 to remove future road reservations on section and midsection lines within the project boundaries of Sections 31, 32, and 33 of Township 10 North, Range 13 West, (SBB&M);
- Amendments to the Circulation Element of the Willow Springs Specific Plan as follows:
 - Specific Plan Amendment No. 42, Map No. 231 to remove future road reservations on section and mid-section lines within the project boundaries of Section 6, Township 9 North, Range 13 West, SBB&M; and
 - o Specific Plan Amendment No. 36, Map No. 232 to remove future road reservations on section lines with the project boundaries of Section 1 of Township 9 North, Range 14 West, SBB&M;
- Petition for Exclusion from the Boundaries from Agricultural Preserve 24, in Zone Map No. 214, for approximately 842 acres of the project site; and
- Nonsummary Vacations of various public access easements in Zone Map No. 232, in and around the project site.

Reviewing Agencies Checklist			
Lead Agencies may recommend State Clearinghouse distribution of the agency please of the second seco	ution by marking agencies below with and "X". e denote that with an "S".		
S Air Resources Board	Office of Emergency Services		
Boating & Waterways, Department of	Office of Historic Preservation		
S California Highway Patrol	Office of Public School Construction		
CalFire	Parks & Recreation		
S Caltrans District # 6 & 9	Pesticide Regulation, Department of		
Caltrans Division of Aeronautics	S Public Utilities Commission		
Caltrans Planning (Headquarters)	S Regional WQCB # Lahontan		
Central Valley Flood Protection Board	Resources Agency		
Coachella Valley Mountains Conservancy	S.F. Bay Conservation & Development Commission		
Coastal Commission	San Gabriel & Lower L.A. Rivers and Mtns Conservancy		
Colorado River Board	San Joaquin River Conservancy		
S Conservation, Department of	Santa Monica Mountains Conservancy		
Corrections, Department of	S State Lands Commission		
Delta Protection Commission	SWRCB: Clean Water Grants		
Education, Department of	SWRCB: Water Quality		
S Energy Commission	SWRCB: Water Rights		
S Fish & Game Region # Fresno	Tahoe Regional Planning Agency		
Food & Agriculture, Department of	S Toxic Substances Control, Department of		
General Services, Department of	S Water Resources, Department of		
Health Services, Department of			
Housing & Community Development	Other		
S Integrated Waste Management Board	Other		
S Native American Heritage Commission	Other		
·			
Local Public Review Period (to be filled in by lead agency			
Starting Date November 22, 2022	Ending Date December 23, 2022		
Lead Agency (Complete if applicable):			
Consulting Firm: PlaceWorks	Applicant: EDF Renewables, LLC. / Scott Kuhlke, Director		
Address: 700 South Flower Street, Suite 600	Address: 1999 Harrison Street, Suite 675		
City/State/Zip: Los Angelex, CA 90017	City/State/Zip: Oakland, CA 94612		
Contact: Addie Farrell, Principal	Phone: _510-457-2168		
Phone: 213-623-1443 Ext 2119	_		
Signature of Lead Agency Representative:			
Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.			
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NOTICE OF PREPARATION/INITIAL STUDY CHECKLIST

Bullhead Solar Project by EDF Renewables, LLC

General Plan Amendment No. 8, Map 214 (Circulation); Conditional Use Permit No. 48, Map 214; Conditional Use Permit No. 49, Map 214; Agricultural Preserve 24, Exclusion, Map 214;

Specific Plan Amendment No. 42, Map 231 (Circulation); Specific Plan Amendment No. 43, Map 231; Zone Classification Change 158, Map 231; Conditional Use Permit No. 121, Map 231; Conditional Use Permit No. 122, Map 231; Vacation of Public Access Easements 03 098 231

Specific Plan Amendment No. 35, Map 232; Specific Plan Amendment No. 36, Map 232 (Circulation); Zone Classification Change No. 36, Map 232; Conditional Use Permit No. 49, Map 232; Conditional Use Permit No. 50, Map 232

(PP22404)

LEAD AGENCY:



Kern County Planning and Natural Resources Department 2700 M Street, Suite 100 Bakersfield, CA 93301-2370

Contact: Janice Mayes, Planner III (661) 862-8793 mayesj@kerncounty.com

November 2022

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INTRODUCTION

Pursuant to the California Environmental Quality Act (CEQA), the Kern County Planning and Natural Resources Department (County) will initiate the preparation of an Environmental Impact Report (EIR) for the Bullhead Solar Project in the unincorporated area of southern Kern County, California.

1. Project Description

1.1. Project Location

The proposed Bullhead Solar Project (proposed project) is a proposal by EDF Renewables, LLC (Project Proponent) to construct and operate a photovoltaic (PV) solar facility and associated infrastructure, including telecommunications towers and internal roads, to generate up to 270 megawatts (MW) of renewable electrical energy with a Battery Energy Storage System (BESS) capable of storing approximately 270 MW, or 1,080 megawatt-hours (MWh), within approximately 25 acres of the project site. The project includes preferred and optional generation-tie (gen-tie routes) to the Rosamond and Whirlwind Substations, only one of which would be constructed. The proposed project is adjacent the previously approved Big Beau Solar Project and will utilize the same interconnection infrastructure.

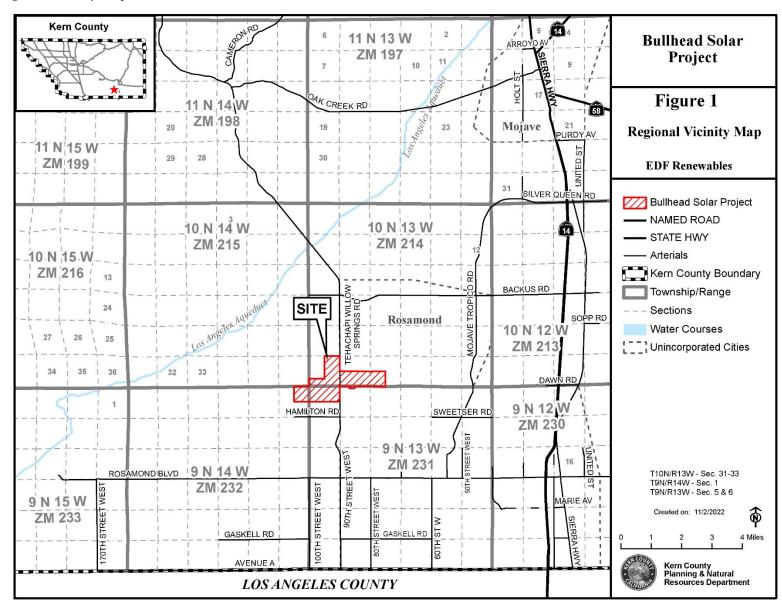
The project site is located on a approximately 1,342 arcres on of 21 privately owned parcels in the southern unincorporated area of Kern County, CA in Section 1 of Township 9 North, Range 14 West; Sections 5 and 6 of Township 9 North, Range 13 West; and Sections 31, 32, and 33 of Township 10 North, Range 13W in the San Bernardino Base and Meridian (SBB&M). Please see **Figure 1:** *Regional Vicinity Map* and **Figure 2:** *Local Vicinity Map*, below, for further details. The land is controlled via lease or owned by the Project Proponent.

The project is generally located in southern Kern County. The project site is south of the Tehachapi Mountains on lands that gradually slope downward from the northwest to the southeast. It is approximately 19 miles south of the city of Tehachapi, 12 miles southwest of the community of Mojave, 8 miles northwest of the community of Rosamond, and 2 miles north of the community of Willow Springs. Other communities in the vicinity of the project site include cities of Lancaster, Palmdale, and Neenach in Los Angeles County, which are roughly 17 miles southeast and 24 miles southeast, and 18 miles southwest of the project, respectively. Edwards Air Force Base is 22 miles east of the project's eastern boundary.

The project site is approximately 12 miles southwest of State Route (SR) 58 and approximately 34 miles east of Interstate (I) 5. SR-14 (Antelope Valley Freeway) is approximately 7 miles to the east of the site, and SR-138 (West Avenue D) is approximately 9 miles to the south in Los Angeles County. The project site is located east and west of Tehachapi-Willow Springs Road, generally bounded by Favorito Avenue to the south, Champagne Avenue to the north, 105th Street West and the Big Beau Solar Project to the west, and 75th Street West to the east.



Figure 1: Regional Vicinity Map

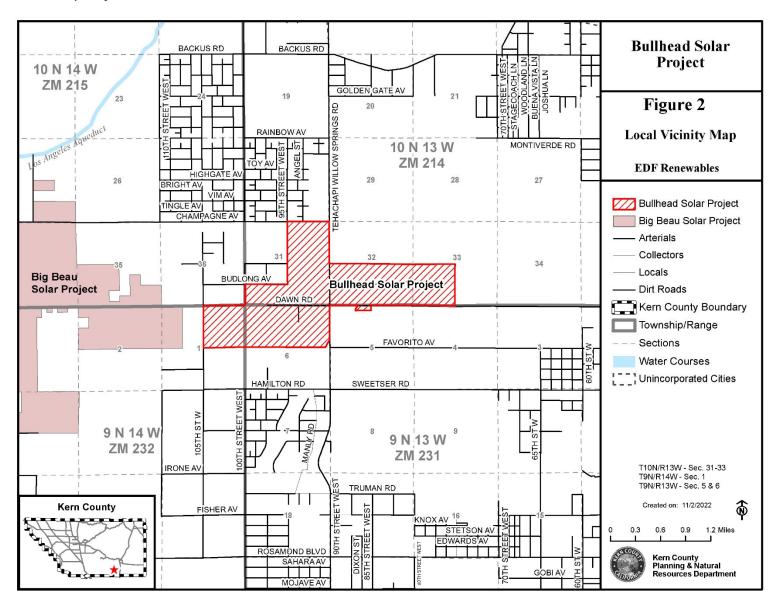


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November 2022



Figure 2: Local Vicinity Map



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November 2022



The project site is located within the Willow Springs, CA, United States Geological Survey 7.5-Minute topographic quadrangle map (quad). Proposed access roads that would be used to access the project site fall within the Willow Springs and Little Buttes quads. The gen-tie route options fall within the Willow Springs, Little Buttes and Tylerhorse Canyon quads. The project is in an area of low population density and is traversed by a network of dirt roads. This area of the County is recognized by the National Renewable Energy Laboratory as having solar and wind resources that are suitable for renewable energy development.

Primary regional access to the project site would be via SR-14 (Antelope Valley Freeway on to Rosamond Boulevard. SR-14 is 7 miles to the east of the project area, and access would be gained by heading west on Rosamond Boulevard, north on Tehachapi Willow Springs Road, and west on Dawn Road.

1.2. Environmental Setting

The proposed project is located on approximately 1,343.2 acres of privately-owned land located in southern Kern County, California. A larger study area has been provided for evaluation to ensure that all lands potentially affected by the proposed project are included in the analysis.

The Federal Emergency Management Agency (FEMA) delineates flood hazard areas on its Flood Insurance Rate Maps (FIRMs). According to the FIRMs for the project area, approximately 99 percent of the project site is located in Zone A, defined as an area subject to the 1 percent annual chance of flooding; also referred to as a 100-year flood event see **Figure 3**, *FEMA Floodplain Map*, below. As a result, the project could be subject to flooding however the construction would comply with construction and design specifications of the Kern County Floodplain Management Ordinance. A very small area of the northeast corner of the site falls within Zone X, areas determined to be outside the 0.2% annual chance of flood).

Portions of the project are within an area that has been designated by the California Department of Conservation (DOC) as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. Within the project area, approximately 29 percent of lands are considered Farmland of Statewide Importance, and approximately 9 percent of lands are considered Grazing Land. The California Department of Conservation designates the remainder of the project as Nonagricultural Natural Vegetation or Vacant and Disturbed Land.

Approximately 842 acres of the proposed project site (approximately 62 percent) are within the Kern County Agricultural Preserve Number 24 boundary. The land is currently fallow as noted in the Farmland History report for this proposed project. If approved, the proposed project would remove the 842 acres of land from Agricultural Preserve number 24. Although the land is currently in an agricultural preserve, (which is a prerequisite to placement under a Williamson Act contract), there are no parcels within the proposed project site that are under any Williamson Act contracts that would be affected by the removal. For additional details, please see the Agricultural Maps, **Figure 4**, *Existing Agricultural Boundaries* Map and **Figure 5**, *Proposed Agricultural Boundaries Map*, below.

Portions of the project study area also lie within an area designated as Important Farmland (i.e., land categorized as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland) by the California Department of Conservation (DOC) Farmland Mapping and Monitoring Program [FMMP].

Any project construction on land categorized as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland would constitute a direct impact on Important Farmland. Approximately 401 acres (29 percent) of land within the project study area is considered Important Farmland, however, the project footprint that may be constructed on Important Farmland would not interfere with agricultural use, since the acreage lies fallow. Most of the land is categorized as Farmland of Statewide Importance (395 acres)



and the remainder is Unique Farmland (6 acres) (DOC 2018). Other FMMP land uses occupying the project study area include Grazing Land and Other Land. Other Land is further designated under the DOC Rural Land Mapping Project as Nonagricultural or Natural Vegetation and Vacant or Disturbed Land. No land within the project study area is designated as Prime Farmland or Unique Farmland.



Figure 3: FEMA Floodplain Map

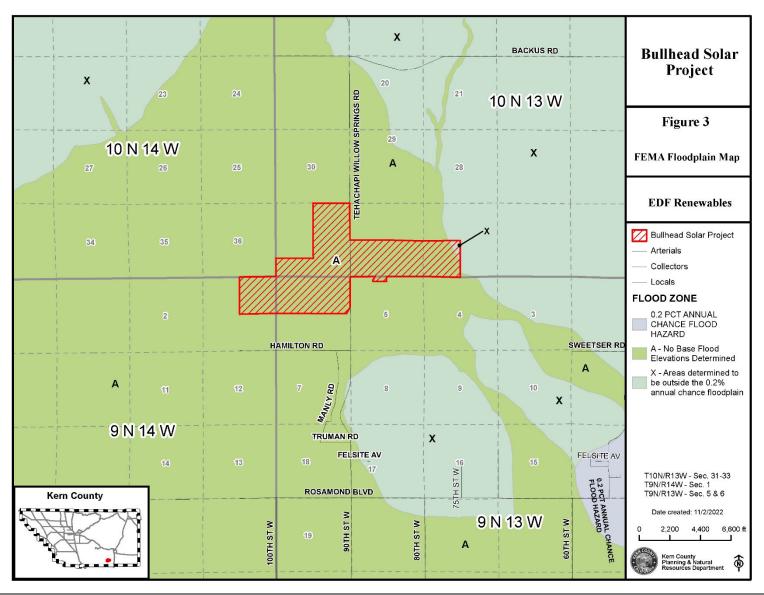




Figure 4: Existing Agricultural Preserve Map

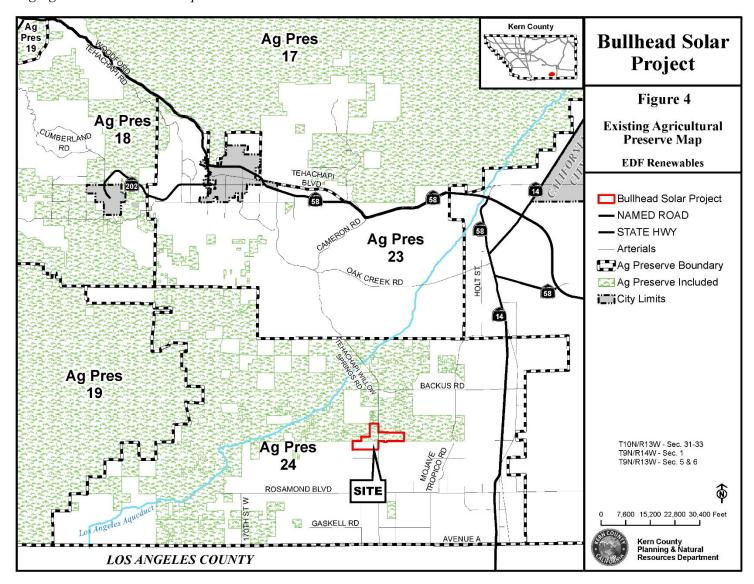
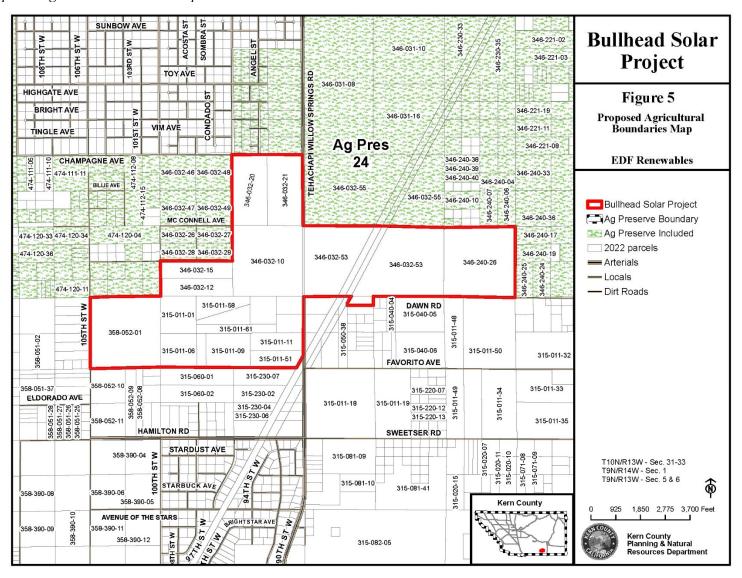




Figure 5: Proposed Agricultural Preserve Map





The project is in an area of protected military airspace, indicating that review is required for all structures over 500 feet in height. The solar PV facilities would have a maximum height of 15 feet and would not exceed the specified height limits. Additionally, the maximum height of the microwave/ communication tower (approximately 90 feet) and gen-tie transmission poles (approximately 160 feet) would be well under the specified 500-foot height limit.

The project site is not within a mineral recovery area or within a designated mineral and petroleum resource site designated by the Kern County General Plan, nor is it identified as a mineral resource zone by the Department of Conservation's State Mining and Geology Board. The project site is not located within the County's NR (Natural Resources) or PE (Petroleum Extraction) Zone Districts.

Table 1: Project Assessor Parcel Numbers, Existing Map Codes, Existing Zoning, and Acreage, below identifies the individual parcels by their respective assessor parcel numbers (APN), which zone map they fall within, the parcel acreages, existing and proposed zoning designations, existing and proposed General Plan Designations and the applicable plan area. Please see **Figure 6**, Existing General Plan Designations Map, **Figure 7**, Proposed General Plan Designations Map, **Figure 8** Existing Zoning Classifications Map, and **Figure 9**, Proposed Zoning Classifications Map, below.

Table 1: Project Assessor Parcel Numbers, Existing Map Codes, Existing Zoning, and Acreage

APN	Мар	GIS Acres	Zoning	Proposed Zoning	General Plan Designation	Proposed Designation	KCGP or Willow Springs
34603210	214	158.2	A FP	A FP	8.1	8.1	KCGP
34603212	214	41.4	A FP	A FP	8.1	8.1	KCGP
34603215	214	41.3	A FP	A FP	8.1	8.1	KCGP
34603220	214	80.8	A FP	A FP	8.1	8.1	KCGP
34603221	214	78.6	A FP	A FP	8.1	8.1	KCGP
34603253	214	283	A FP	A FP	8.3; 8.1	8.3; 8.1	KCGP
34624026	214	158.8	A FP; A	A FP; A	8.3; 8.3/2.5	8.3; 8.3/2.5	KCGP
31501101	231	42.9	E (5) RS MH FPS	A FPS;	5.3/4.4	5.3	Willow Springs
31501104	231	15.1	E (2 1/2) RS MH FPS;	A FPS	6.2/4.4;	6.2	Willow Springs
31501105	231	15.7	E (2 1/2) RS MH FPS;	A FPS	5.3/4.4;	5.3	Willow Springs
31501106	231	39.4	E (2 1/2) RS MH FPS;	A FPS	5.3/4.4	5.3	Willow Springs



APN	Мар	GIS Acres	Zoning	Proposed Zoning	General Plan Designation	Proposed Designation	KCGP or Willow Springs
31501108	231	10.3	E (2 1/2) RS MH FPS	A FPS	5.3/4.4	5.3	Willow Springs
31501109	231	48.5	E (2 1/2) RS MH FPS	A FPS	5.3/4.4	5.3	Willow Springs
31501111	231	29.5	E (2 1/2) RS MH FPS	A FPS	5.3/4.4	5.3	Willow Springs
31501151	231	27.6	E (2 1/2) RS MH FPS	A FPS	5.3/4.4	5.3;	Willow Springs
31501158	231	27.9	E (5) RS MH FPS	A FPS	5.3/4.4	5.3	Willow Springs
31501160	231	23.6	E (5) RS MH FPS	A FPS	5.3/4.4	5.3	Willow Springs
31501161	231	22.7	E (2 1/2) RS MH FPS;	A FPS	5.3/4.4	5.3	Willow Springs
31505040	231	7.1	E (2 1/2) RS MH FPS	A FPS	5.6	5.6	Willow Springs
35805201	232	160.1	E (2 1/2) RS FPS & E (5) RS FPS	A FPS	5.3/4.4	5.3	Willow Springs
35805103	232	10.19	E (2 1/2) RS FPS	A FPS	5.3/4.4	5.3	Willow Springs

Willow Springs Plan Map Code:

4.4=Comprehensive Plan Area

5.3= Residential, 10 Dwelling Units/Net Acre Maximum; 4,254 Sq. Ft. Area/Unit

5.6=Residential, Min 2.5 Gross Acres/Unit

6.2= General Commercial

Kern County General Plan Map Code:

2.5= Flood Hazard Overlay

8.1= Intensive Agriculture (Min. 20 Acre Parcel Size)

8.3= Extensive Agriculture (Min. 20 Acre Parcel Size);

Zone Designation:

A= Exclusive Agriculture

E(2 ½)= Estate, 2 ½ Acre Minimum

E(5)= Estate, 5 Acre Minimum FP= Floodplain, Combining District

FPS= Floodplain Secondary, Combining District

MH= Mobilehome Combining District RS= Residential Suburban, Combining District



Surrounding Land Uses

Table 2, Existing Project Site and Surrounding Properties, Existing Land Use, General Plan Map Code Designations, and Zoning, below, identifies the existing land use, the existing general plan land use designation, and the existing zoning for the project site and surrounding areas. Additionally, such conditions are described for adjacent lands to the north, east, south, and west of the project site.

TABLE 2
EXISTING PROJECT SITE AND SURROUNDING PROPERTIES, EXISTING LAND USE, GENERAL PLAN MAP CODE DESIGNATIONS, AND ZONING

Location	Existing Land Use	Existing General Plan Map Code Designations	Existing Zoning
Project Site	Agricultural	8.1 Intensive Agriculture; 8.3 (Extensive Agriculture; 8.3/ 2.5 (Extensive Agriculture Flood Hazard Overlay); 5.3/4.4, 5.5, 5.6, (Residential) Willow Springs Specific Plan; 6.2 (General Commercial) Willow Springs Specific Plan	A (Exclusive Agriculture); E (Estate 2.5 Acre, Residential Suburban, Mobilehome Combining, Flood Plain Secondary); E (Estate 5 Acre, Mobilehome Combining, Flood Plain Secondary)
North	Agricultural, Vacant Land, Rural Residential, Wind and Solar Development	8.1 (Intensive Agriculture); 8.3 (Extensive Agriculture 20 Acres); 8.3/2.5 (Extensive Agriculture 20-80 Acres, Flood Hazard Overlay); 8.5 (Resource Management)	A (Exclusive Agriculture, Flood Plain); PL (Platted Lands, Residential Suburban, Flood Plain)
South	Agricultural, Vacant Land, Rural Residential	1.1(State and Federal Land) 3.1 (Parks and Recreation Areas) 3.2(Educational Facilities) 5.5 (Residential-Maximum 1 Unit/Net Acre) 5.3/4.4(Residential-Maximum 10 Units/Net Acre, Comprehensive Plan Area- WSSP) 5.6 (Residential, Min 2.5 Gross Acres/Unit) 5.7(Residential-1 Unit/per 5 Acres) 6.2 (General Commercial); 8.1 (Intensive Agriculture); 8.5 (Resource Management)	A (Exclusive Agriculture); E (Estate 5 Acre, Residential Suburban Combining, Flood Plain Secondary); E (Estate 2 ½ Acre, Residential Suburban Combining, Flood Plain Secondary); E (Estate 2 ½ Acre, Residential Suburban Mobile Home Combining, Flood Plain Secondary); E (Estate 1 Acre, Residential Suburban Combining, Flood Plain Secondary); OS (Open Space)
East	Agricultural, Vacant Land, Rural Residential, Solar Development	8.3 (Extensive Agriculture, Flood Plain) 8.5 (Resource Management) 5.7 (Residential-1 Unit/per 5 Acres)	A (Exclusive Agriculture); A (Exclusive Agriculture, Flood Plain); E (Estate 5 Acre, Residential Suburban Combining, Flood Plain Secondary); E (Estate 2 ½ Acre, Residential Suburban Combining, Flood Plain Secondary)
West	Solar and Wind Development	5.3/4.4(Residential-Maximum 10 Units/Net Acre, Comprehensive Plan Area- WSSP) 5.6 (Residential, Min 2.5 Gross Acres/Unit) 8.5 (Resource Management)	A (Exclusive Agriculture, Floodplain)

Existing land use in the vicinity of the project site generally includes undeveloped lands, rural residential, active and fallow agricultural lands, access roadways, the California aqueduct, high-voltage transmission line corridors, and solar and wind development uses to the north, south, east and west of the project site.

The sensitive receptor closest to the project site is a rural residence that sits directly adjacent to the south of the project site, on APN 315-230-07. There are several other sensitive receptors located within 1,000



feet of the project site. Willow Springs International Motorsports Park, a local park, is located approximately 2 miles southeast of the project site. The closest school to the site is the Tropico Middle School, located approximately 6 miles southeast of the project site.

The proposed project would be served by the Kern County Sheriff's Department for law enforcement and public safety services, with the closest substation being the Rosamond Substation. Fire protection and emergency medical services would be provided by the Kern County Fire Department, with the closest station being Rosamond Substation, located at 3179 35th Street West, Rosamond, and Kern County Emergency Medical Services for medical care and emergency services.

The nearest public airport to the project site is the Rosamond Skypark, located at 4000 Knox Avenue, Rosamond, approximately 7 miles southeast of the project site. The project site is not located within any safety or noise zones for the Rosamond Skypark.



Figure 6: Existing General Plan Designation Map

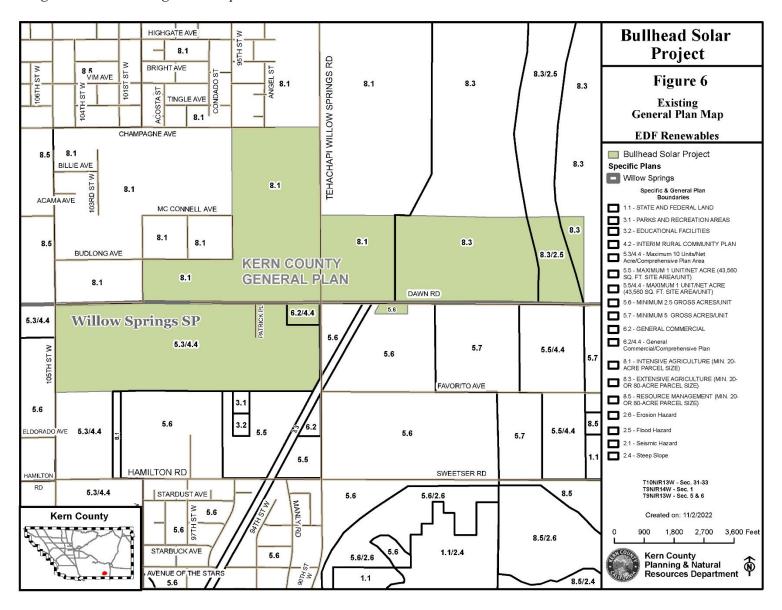




Figure 7: Proposed General Plan Designation Map

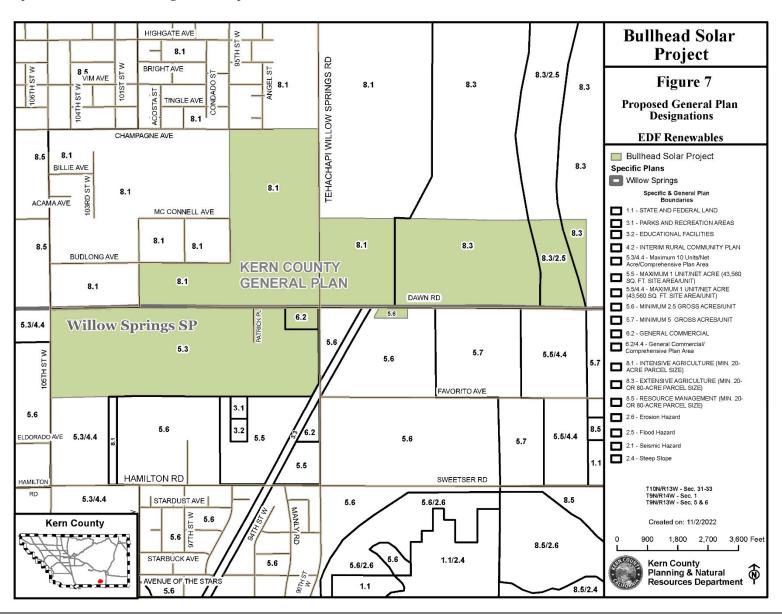




Figure 9: Proposed Zoning Designation Map

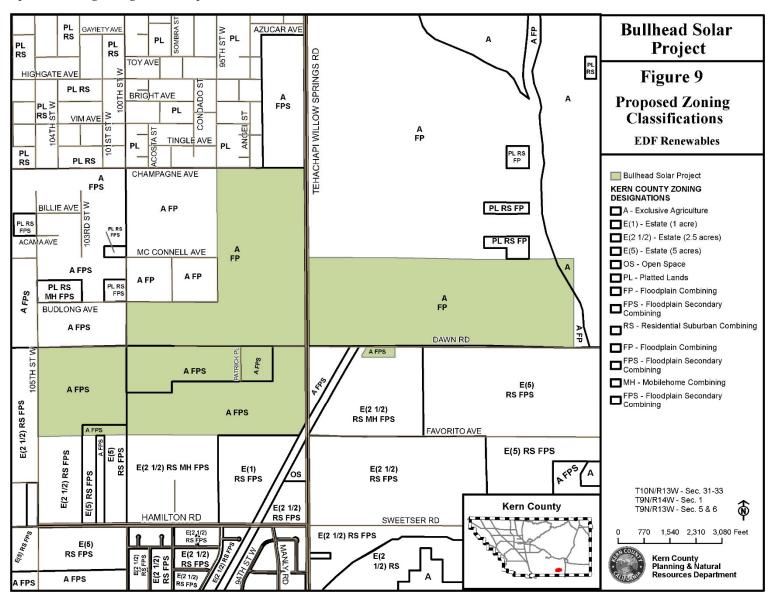
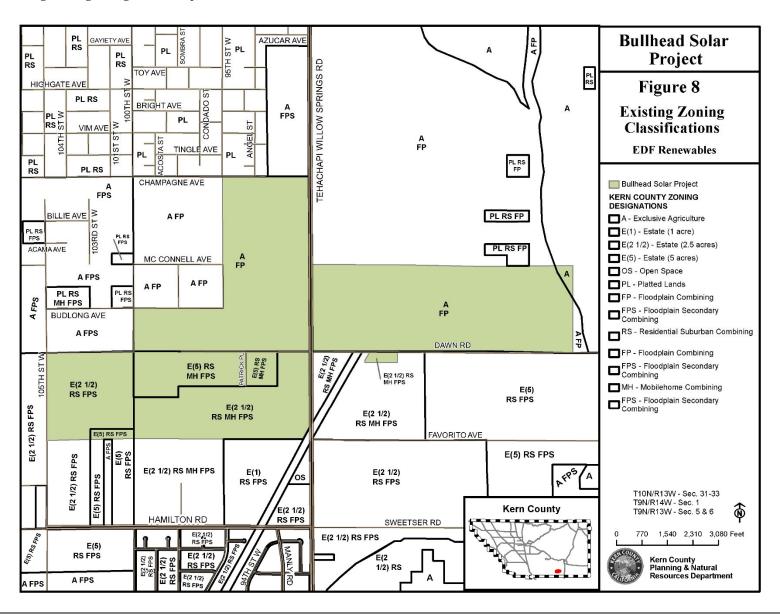




Figure 8: Existing Zoning Designation Map





1.3. Project Description

Project Overview

The Bullhead Solar is a proposed project photovoltaic (PV) solar facility with associated infrastructure on approximately 1,343 acres of privately-owned land in southeastern Kern County. As stated above, the proposed project would generate up to 270 MW of renewable electrical energy with a battery energy storage system (BESS) capable of storing approximately 270 MW, or 1,080 MWh of storage capacity. The proposed project includes the installation of solar development with associated PV panels, battery storage, inverters, converters, generators, foundations, transformers, and preferred and optional generation-tie (gen-tie) routes to the Rosamond and Whirlwind Substations, only one of which would be constructed. The project also includes laydown yards, a meteorological station, a microwave/communication tower, and a substation.

Implementation of the project as proposed includes the following requests:

- Amendments to the Land Use Element of the Willow Springs Specific Plan as follows:
 - Specific Plan Amendment No. 43, Map No. 231 from Map Code 5.3/4.4 (Maximum 10 Units per Net Acre/Comprehensive Planning Area) to Map Code 5.3 (Maximum 10 Units per Net Acre) on approximately 288 acres, and from Map Code 6.2/4.4 (General Commercial/Comprehensive Planning Area) to Map Code 6.2 (General Commercial) on approximately 15 acres; and
 - O Specific Plan Amendment No. 35, Map No. 232 from Map Code 5.3/4.4 (Maximum 10 Units per Net Acre/Comprehensive Planning Area) to Map Code 5.3 (Maximum 10 Units per Net Acre) on approximately 160 acres;
- Changes in Zone Classifications as follows:
 - O Zone Classification Change No. 158, Map No. 231 from E(5) RS MH FPS (Estate, 5 Acres, Residential Suburban, Mobile Home Combining, Flood Plain Secondary Combining) to A FPS (Exclusive Agriculture, Flood Plain Secondary Combining), or a more restrictive district, on approximately 115 acres and from E(2 ½) RS MH FPS (Estate, 2 ½ Acres, Residential Suburban, Mobilehome Combining, Flood Plain Secondary Combining) district, to A FPS (Exclusive Agriculture, Flood Plain Secondary Combining), or a more restrictive district, on approximately 215.7 acres; and
 - O Zone Classification Change No. 36, Map No. 232 from E (5) RS FPS (Estate, 5 Acres, Residential Suburban, Flood Plain Secondary Combining) district on approximately 8.4 acres, and E 2 ½ RS FPS (Estate, 2 ½ Acres, Residential Suburban, Flood Plain Secondary Combining) district on approximately 151.7 acres to A FPS (Exclusive Agriculture, Flood Plain Secondary Combining), or a more restrictive district.
- Conditional Use Permits to allow for the construction and operations of a combined approximate 270 MW solar facility, as well as ancillary structures including an approximate 270 MW battery storage system with up to 1,080 MWh of storage capacity, within the A (Exclusive Agriculture) Zone District pursuant to Section 19.12.030.G of the Kern County Zoning Ordinance (in Zone Maps 214, 231, and 232):
 - o Conditional Use Permit No. 48, Map No. 214 for approximately 842 acres;



- Conditional Use Permit No. 121, Map No. 231 for approximately 331 acres; and
- o Conditional Use Permit No. 50, Map No. 232 for approximately 160 acres
- Conditional Use Permits to allow the construction and operation of a microwave telecommunications tower, within the A (Exclusive Agriculture) Zone District pursuant to Section 19.12.030.f F of the Kern County Zoning Ordinance (in Zone Maps 214, 231, and 232):
 - o Conditional Use Permit No. 49, Map No. 214;
 - o Conditional Use Permit No. 122, Map No. 231; and
 - o Conditional Use Permit No. 49, Map No. 232
- Amendment to the Circulation Element of the Kern County General Plan No. 8, Map No. 214 to remove future road reservations on section and mid-section lines within the project boundaries of Sections 31, 32, and 33 of Township 10 North, Range 13 West, (SBB&M);
- Amendments to the Circulation Element of the Willow Springs Specific Plan as follows:
 - Specific Plan Amendment No. 42, Map No. 231 to remove future road reservations on section and mid-section lines within the project boundaries of Section 6, Township 9 North, Range 13 West, SBB&M; and
 - Specific Plan Amendment No. 36, Map No. 232 to remove future road reservations on section lines with the project boundaries of Section 1 of Township 9 North, Range 14 West, SBB&M;
- Petition for Exclusion from the Boundaries from Agricultural Preserve 24, in Zone Map No. 214, for approximately 842 acres of the project site; and
- Nonsummary Vacations of various public access easements in Zone Map No. 232, in and around the project site.

The power generated on the project site would assist the state in complying with the Renewables Portfolio Standard under Senate Bill 350, which requires that by December 31, 2030, 50 percent of all electricity sold in the state shall be generated from renewable energy sources. The power generated on the project site would be sold to California investor-owned utilities, municipalities, community choice aggregators, or other purchasers in furtherance of the goals of the California Renewable Energy Portfolio Standard. The project has an anticipated operational life of up approximately 35 years. At the end of the project's operational term, the project proponent would determine whether the project site should be decommissioned



and deconstructed or if it would seek an extension of its CUPs. If any portion of the project site is decommissioned, it would be converted to other uses in accordance with the applicable land use regulations in effect at that time.

1.4. Project Facilities, Construction, and Operations

Project Facilities

The project facilities would include the following components, which are described in greater detail thereafter:

- Photovoltaic (PV) Solar modules and trackers
- Inverters and transformer systems
- Battery energy storage system (BESS)
- Onsite substation
- Microwave/Telecommunications Tower and Supervisory Control and Data Acquisition (SCADA) system
- Onsite meteorological station
- Generation-tie (Gen-tie) lines and electrical collection system
- Site access road(s)
- Site Security
- Lighting
- Stormwater Management

PV Solar Modules and Trackers

The proposed project would use up to 270-MW PV-system blocks to convert solar energy directly to electrical power for export to the electrical grid.

Solar power is generated through PV modules converting sunlight striking the modules directly to low-voltage direct-current (DC) power, which is subsequently transformed to AC power via an inverter that is placed on site. The proposed project site would develop modules using either fixed tilt or tracker technology. Trackers tilt the panels to follow the course of the sun, optimizing the incident angle of sunlight on their surface. The PV panel modules are mounted on steel support posts that are pile-driven into the ground. The arrays are typically placed on an aluminum rail such that with a maximum tilt of 60 degrees the top of the array would be a maximum of 15 feet above grade at the tallest point and approximately 2 feet above the grade at the lowest point.

The PV modules are made of semiconductor material encapsulated in glass in which the PV effect converts light (photons) into electrical current. PV is best known as a method for generating electric power by using solar cells to convert energy from the sun into electricity. Energy from the sun is transmitted to the Earth as photons, which contain different levels of energy corresponding to different frequencies of the solar spectrum. When a photon is absorbed by a PV cell, the energy of the photon is transferred to an electron in



an atom within the PV cell. This added energy allows the electron to escape from the atom to become part of the current in an electrical circuit. **Figure 10**, *Proposed Site Plan*, shows the proposed layout of the solar panels within the project sites.

Inverters and Transformer Systems

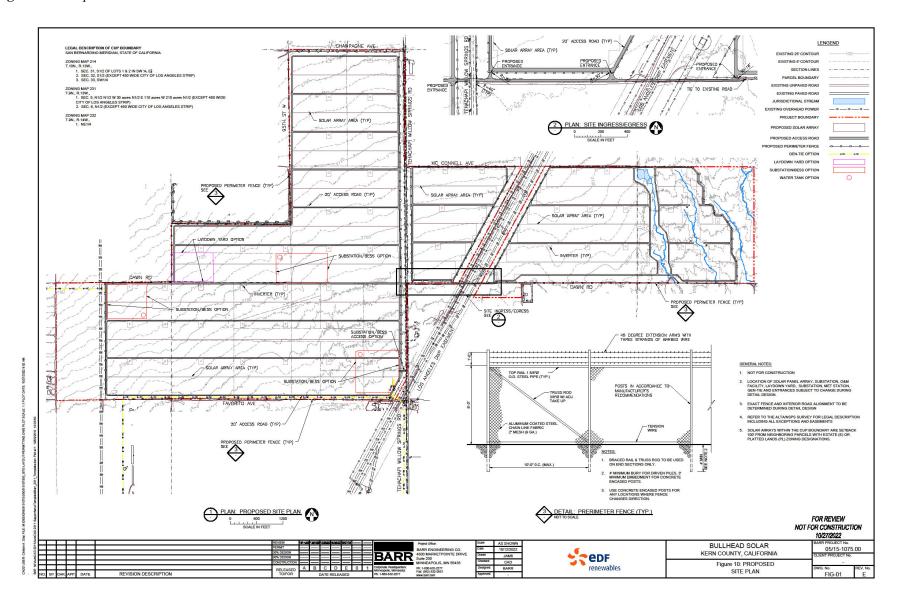
Within the proposed solar arrays there would be power conversion stations (PCS), also known as inverters, that would contain at a minimum one inverter and one transformer. Inverters are usually housed within an enclosed structure, which helps to reduce the resulting operational noise levels. PCS would also likely include an exhaust fan, as well as a heating, ventilation, and air conditioning (HVAC) system, which is typically mounted to the exterior of the enclosure. Noise levels generated by PCS would be associated with operation of the inverters, transformer, exhaust fans, and HVAC systems.

Battery Energy Storage System

The proposed project would include a BESS, which would be located immediately adjacent to the proposed substation. The BESS would provide approximate 270 MW, or 1,080 MWh, of energy storage. The BESS would likely consist of containers housing lead acid-based and/or lithium ion batteries connected in strings and mounted on racks. AC-coupled BESS design standards typically include lighting, monitoring equipment, cooling units, active exhaust venting, multiple fire detection units including gas/heat/smoke detectors, and fire suppression systems, which adequately address fire risk associated with the unit. ACcoupled BESS units typically require their own inverters on their own skid. However, some BESS equipment (e.g., inverters, auxiliary transformer to control the HVAC system) may be adjacent to the container instead of within the container. The BESS configuration would include up to 270 MW, or 1,080 MWh, of stored energy with up to 316 battery energy storage containers with associated inverters. A water storage tank will be installed to provide water supply needed for fire protection and operations, based on consultation with Kern County Fire Department. The BESS site would include self-contained container units, measuring approximately 70-feet long by 12-feet wide by 13-feet high (including HVAC units; one on each end depending on container dimensions), situated in a parallel configuration. Each container would have a storage capacity of up to approximately 4 megawatt-hours. Foundational pads for the BESS containers and inverters would include structural material like crushed aggregate, concrete, and/or steel. The containers would be non-walk-in type and equipped with doors along the length of the containers plus one on each end. AC-coupled BESS would be incorporated and consolidated within or adjacent to the project substation area and would require up to 25 acres within the substation yard to house the BESS containers.



Figure 10: Proposed Site Plan





Substation

The proposed project would include construction of one substation facility in one of three potential locations (see **Figure 10**, *Proposed Site Plan*), above, within the project boundary. The substation would collect the power generated by the PV solar system blocks, transport the power via the underground/overhead power collection system, and then convert the power for transmission in an overhead 220-kV line to the Rosamond Switching Station or Whirlwind Substation.

Equipment at the project substation would include transformers, bus work, switches, breakers, and all associated equipment required to be compliant with utility-grade interconnection services. The substation facilities would house the power generation control and relaying equipment, station batteries, Supervisory Control and Data Acquisition System (SCADA) and communication systems, and potentially housing with radio or microwave communication mounted on a transmission tower up to 90 feet tall. The project substation would be remotely operated and periodically maintained but would not be permanently staffed. The substation site would be cleared, graded, and graveled. A security fence would be installed around the perimeter for safety and security purposes. The fence would consist of an up to 6-foot chain-link fence with up to three strands of barbed wire for a total maximum height of 8 feet. For safety purposes this fence would not be adapted for wildlife movement. The BESS would be co-located within or adjacent to the substation yard. Construction and operations of the project substation and battery storage would affect up to 25 acres.

Telecommunications Tower and Supervisory Control and Data Acquisition (SCADA) System

The proposed project would require redundant telecommunication connections. The primary telecommunication line would consist of fiber optic cable and/or copper telecommunication line installed above and/or below ground. Supporting the proposed project would be one microwave/communication tower to be located with the substation in one of various potential locations, consisting of up to three 6-foot high-performance microwave dish(es) fixed to a steel monopole of up to 90 feet in height. An approximately 12-foot by 20-foot equipment shelter would also be included within a fenced area. The shelter would have a maximum height of 10 feet. The proposed project radio equipment would be within the equipment shelter and connected to the microwave dish(es) via coaxial or fiber optic cables. If the microwave tower were to be outside the selected substation footprint, fencing would consist of an up to 6-foot chain-link fence with up to three strands of barbed wire (up to 2 feet high), for a total maximum height of 8 feet.

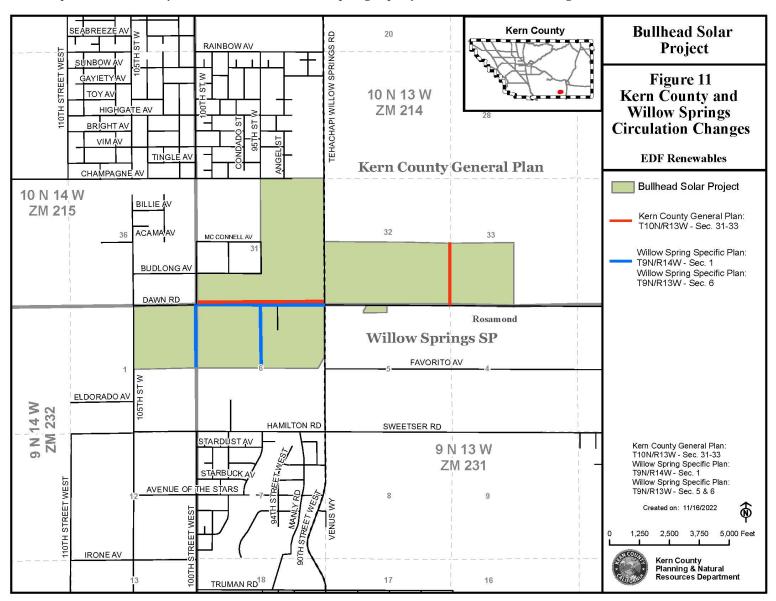
The SCADA system is critical to the CAISO and utility interconnection and for the proper O&M of the project. It uses proprietary software; a fiber optic transmission system; a telephone, radio, and/or microwave communications network; and other means of communication such as radio links and phase loop communication systems. The SCADA system functions as a remote start, stop, reset, and tag-out system for facilities, thereby minimizing the manpower and site diagnostic information generated from the panels. The SCADA system would also control the proposed project substation, allowing for fully centralized operation of the project to meet all CAISO and utility interconnection requirements.

Onsite Meteorological Data Collection System

The proposed project may require a meteorological data collection system. The systems would be mounted within the project site. The systems would include a variety of instruments to collect meteorological data. Meteorological data would be collected at the maximum height of the solar panels approximately 15 feet above the ground.



Figure 11: Proposed Kern County General Plan and Willow Springs Specific Plan Circulation Changes





Generation-Tie Lines and Electrical Collection System

The proposed project includes four options for gen-tie routes including three deviation routes: Rosamond Option 1, Rosamond Option 2, Rosamond Option 3, Rosamond Option 3.1 (deviation), Whirlwind Option 1, and Whirlwind Options 1.1 and 1.2 (deviations). Only one route would be constructed. The selected gentie route would be constructed within a 125-foot-wide corridor and would consist of utility poles, trenches, and a corresponding dirt access road. Rosamond Gen-tie Option 1 and Rosamond Gen-tie Option 3 would be a Franchise Agreement with the County and would be constructed within the Kern County right-of-way on Tehachapi Willow Springs Road and Rosamond Boulevard. Utility trench elements would be incorporated into the shoulder of the roads. The utility trenches would not add to the footprint of the gentie road. All utility poles associated with the gen-tie would be erected inside the limits of the corridor. Whirlwind Gen-tie Option 1 is proposed to be partially co-located on existing poles on previously surveyed properties (i.e., the Antelope Valley Transmission Line [AVTL]).

The project power generated would be fed to the project substation through a 34.5-kV power collection system. The transmission poles would accommodate the underground feeder splice lines to the overhead lines and would range in height but be no taller than 160 feet. The likely materials for the poles would be wood, non-reflective metal, and/or spun concrete. These overhead lines would be carried via new and existing electrical poles to the Rosamond Switching Station or the Whirlwind Substation. Proposed underground transmission lines (if necessary) and fiber optic lines would be co-located with roads.

Underground collection cables would be installed in conjunction with roads and panel arrays within the proposed project site, connecting each solar panel to a feeder circuit; each feeder circuit would in turn be connected to the switching/substation. Overhead circuits could be used to avoid environmentally sensitive areas or other constraints that are inherent to the proposed project site. The different solar panel circuits would gather at the substation (or switchyard) and would then be sent to the overhead electricity lines leading to a grid interconnection point. See **Figure 10**, *Proposed Site Plan*, which shows the gen-tie line alignment.

Site Access

The primary access to the project from the regional transportation system would be gained by exiting SR-14 (Antelope Valley Freeway) on to Rosamond Boulevard. SR-14 is 7 miles to the east of the project area, and access would be gained by heading west on Rosamond Boulevard, north on Tehachapi Willow Springs Road, and west on Dawn Road. One possible secondary route has been identified from the western side the project area; however, the Tehachapi Willow Springs Road access would be the primary route.

A secondary route to the site is from 120th Street West, heading north from Rosamond Boulevard. In association with other solar projects in the area, 120th Street West is currently graded and recently widened. 120th Street West connects to the adjacent and previously permitted BigBeau Solar Project; construction vehicles could use 120th Street West, and then continue through the BigBeau site to access the Bullhead Solar project site. In addition to the primary and secondary routes, access to the Bullhead Solar project site also could be accomplished through other routes from within the adjacent BigBeau Solar Project, to the west of the Bullhead site.

Internal access roads would be approximately 20 feet wide and would be accessed via multiple gates. The access points and interior driveways would be constructed in accordance with Kern County and California Department of Forestry and Fire Protection (CalFire) requirements and maintained to ensure on-site circulation for emergency vehicles during all weather conditions.

Site Security



Security fencing would be installed in accordance with Kern County zoning requirements. Based on current Kern County ordinances, the project applicant has the option to fence either the boundaries of the entire proposed project site, each solar panel row independently, or a grouping of solar blocks. At this time, it has not been determined which of these options would be used. A security fence would be installed that would consist of an up to 6-foot chain-link fence with up to three strands of barbed wire, for a total maximum height of 8 feet. Fencing around the panel blocks would be adapted prior to the commencement of operations to allow for the movement of wildlife. All fence installation requirements would be evaluated, and the best-fit scenario would be incorporated within the project site based upon Kern County's final determination.

Security services would be provided during construction, and any additional security would be provided on an as-needed basis. The security personnel would be responsible for controlling egress and ingress, enforcing safety requirements, and ensuring compliance with all other policies for control of the proposed project site during the construction phase. After construction, these duties would become the responsibility of the O&M provider. A Knox-Box containing keys for the proposed project would be installed to permit emergency access to the site.

Lighting

Operation of the proposed project would require onsite nighttime lighting for safety and security. The level and intensity of lighting would be the minimum needed per the County's *Dark Skies Ordinance* (Chapter 19.81 of the Kern County Zoning Ordinance). Lighting at the facility would be restricted to areas required for safety and security. Exterior lights would be shielded, while being directed downward and on site so that light or glare would be minimized. Switched lighting would be provided in areas where continuous lighting is not required for normal operation, safety, or security.

Stormwater Management

To meet current Kern County site development requirements, a detention/retention basin or basins may be required, depending on the change in hydrological conditions on site and, if necessary, based on an engineering-level hydrological assessment for the site at the base of each solar array block for stormwater management. The required storage would be provided via shallow ponding at the downstream limit of the sub-basin(s).

Construction Activities

The construction period for the proposed project from site preparation through construction and testing is expected to commence in the third quarter of 2024 and would extend for approximately 18 months into 2026.

Construction of the proposed project would include, but not be limited to, the following activities: (1) moving of equipment onto the site; (2) site preparation and grading; (3) access road improvements, if needed; (4) gen-tie line construction; (5) internal roads construction; (6) electrical substation and microwave tower construction; (7) solar array structural, underground, and panel installation, and battery storage construction; (8) PV and battery storage commission; and (9) project finalization/commercial operation. The various elements of the proposed project would be constructed concurrently on the property.

Schedule and Workforce

It is anticipated that the construction traffic would use Rosamond Boulevard, Tehachapi Willow Springs and 120th Street West as points of ingress/egress to the property and that, once on site, they would access



various sections via the existing and improved network of dirt roads. Employees may also access the site through the adjacent BigBeau Solar Project, owned and operated by the project proponent. It is estimated that on average there would be 201 construction workers per day with a peak of up to 627 workers. Construction employees may be able to carpool from respective population centers such as Tehachapi and Rosamond, and report to the designated construction staging yards prior to the beginning of each workday. One or more of the proposed laydown yards may be used as a parking and meeting area for the construction employees.

Construction activities are typically expected to occur between 6:00 am and 5:00 pm, Monday through Friday. Additional hours may be necessary to make up schedule deficiencies or to complete critical construction activities. The proposed project would be constructed by several specialized construction contractors, with construction activities taking place as specified in the County's Code of Ordinances, Chapter 8.36, as required to meet the construction schedule. Construction activities are allowable between the hours of 6:00 a.m. and 9:00 p.m. on weekdays and between the hours of 8:00 a.m. and 9:00 p.m. on weekends. Nighttime activities could potentially include, but are not limited to, refueling equipment, staging equipment and material for the following day's construction activities, quality assurance/control, and commissioning.

Construction materials and supplies would be delivered to the project site by truck. It is anticipated that all such materials and supplies would be stored in a laydown area on-site within the project boundaries for each phase of. When possible, equipment and materials would be stored in proximity to the area where work would be undertaken. For work along the gen-tie routes, it is anticipated that adequate land areas within the affected easements or rights-of-way would be available to accommodate staging/laydown areas during the construction phase and that off-site lands would not be affected. Truck deliveries would normally occur during daylight hours. However, there could be offloading and/or transporting to the project site on weekends and during evening hours.

Site Preparation, Earthwork and Construction Control Measures

The project site would be cleared and graded as needed to allow for the installation of the solar arrays, BESS, related infrastructure, access road improvements, interior access roads, and temporary construction laydown areas. Sediment and erosion controls would be installed in accordance with an approved Storm Water Pollution Prevention Plan (SWPPP). Stabilized construction entrances and exits would also be installed at the project entrance driveways to ensure that potential for tracking of sediment onto adjacent public roadways is minimized.

The project site is mostly flat and would require minimal grading to allow for installation of the PV panels and BESS. Minimal grading is expected for the construction of the PCS, substation, BESS, internal circulation and tracker installation. The primary access road via Tehachapi Willow Springs Road is paved. Dawn Road, internal circulation roads and the secondary access road of 120th Street West are all dirt and would require some improvement, however 120th Street West has been improved already for other nearby projects. If needed, road improvement activities may include grading, widening, compacting, and/or applying an approved soil stabilizer. In addition, a 20-foot wide–minimum road is required around the perimeter of the solar arrays for the fire department and emergency vehicles. Additional internal maintenance roads would be located throughout the project area. Spacing between each row would depend on final panel type, orientation, and any County regulations. Internal access roads would be up to 20 feet wide and would be cleared and compacted for equipment and emergency vehicle travel and access to the solar blocks. These project site access roads would remain in place for ongoing operations and maintenance activities after construction is completed.



Dust-minimizing techniques, such as watering active construction sites would occur and would be based on the type of operation, soil, and wind exposure. Prohibition of grading activities during periods of high wind (over 20 miles per hour), limiting vehicle speed on-site to 15 miles per hour, and covering trucks hauling dirt, sand, or loose materials would be implemented as needed. Project grading would be minimized to the extent feasible to reduce unnecessary soil disturbance and movement. Earthwork would require the use of scrapers, excavators, dozers, water trucks, paddlewheels, haul vehicles, and graders. On-site trenching also would be required to enable the placement of underground electrical and communication lines. Certain access roads and turn-arounds may also be surfaced with aggregate or decomposed granite in conformance with emergency access requirements. Proposed grading would balance on-site and import or export of soils would not be required.

Noise-generating construction activities would be limited to construction hours allowed by the County's noise ordinance. All stationary construction equipment that may result in excessive noise or vibration levels would be operated away from sensitive noise receptors to the extent feasible. Construction activities would occur such that maximum noise levels at affected sensitive noise receptors (i.e., rural residential uses) would not exceed the County's adopted noise threshold levels.

Applicable local, State, and federal requirements and best management practices (BMPs) would be implemented during the construction phase. Consistent with the County zoning ordinance and with guidelines provided in the California Stormwater Quality Association's Construction Best Management Practice Handbook, (BMP)s would be implemented, including preparation of a SWPPP and a soil erosion and sedimentation control plan to reduce the potential for erosion and to minimize effects on stormwater quality. Stabilized construction entrances and exits would be installed at all site entrance points from public roads to reduce the tracking of sediment onto adjacent public roadways. All site preparation would occur in conformance with County BMPs and Eastern Kern Air Pollution Control District rules for dust control.

Construction Water Use

Water would be required during the construction phase for dust suppression during such activities as clearing, grading, and soil compaction. During construction, water is anticipated to be supplied by well water purchased from a local supplier and or use of the on-site wells at the project site. This local groundwater is suitable as a primary supply for soil compaction and dust control but may not be suitable for potable use. Water would be obtained from on-site wells or delivered via truck from an off-site source(s) within the project vicinity. If water is trucked into the site, it is anticipated that an available local water source would be selected to minimize truck trips/lengths in transporting water to/from the site.

Water usage during construction, primarily for dust-suppression purposes, is not anticipated to exceed 200 acre-feet over the 18-month construction phase.

Bottled water would be provided to the construction workers for consumption. Additionally, on-site restroom facilities for the construction workers would be provided by portable units to be serviced by licensed providers. No connection to a public sewer system is proposed or required for project construction or operation.

Electrical Supply

The temporary construction facilities would obtain electricity from a temporary drop off line from the local electrical distribution system. Up to fifteen portable electrical generators that meet local and State emission controls would be used during construction.



Project Operation and Maintenance Activities

Once the proposed project is constructed, maintenance would generally be limited to the following:

- Cleaning of PV panels
- Monitoring electricity generation
- Providing site security
- Facility maintenance replacing or repairing inverters, wiring, and PV modules

Schedule and Workforce

During the operational phase, the proposed project would be operated on an unstaffed basis and monitored remotely. Periodically, personnel would visit the site for inspection, security, maintenance, and system monitoring purposes. Approximately up to an additional 15 part-time and/or full-time staff will be on site for maintenance and operational activities, these additional staff will be located at the adjacent, previously constructed BigBeau Solar O&M building.

The facility would operate seven days a week, 24 hours a day, generating electricity during normal daylight hours when the solar energy is available. Maintenance activities may occur seven days a week, 24 hours a day to ensure PV panel output when solar energy is available.

Operational Water Usage

Water demand for panel washing, dust control and fire suppression is not expected to exceed 11 acre-feet per year, and would peak at 8 acre-feet over a three-month window annually for panel washing. Water is anticipated to be obtained from on-site wells or delivered via truck from an off-site source(s) within the project vicinity. If water is trucked into the site, it is anticipated that an available local water source would be selected to minimize truck trips/lengths in transporting water to/from the site.

Electrical Supply

Power for plant auxiliaries would be provided by the project's electrical generation or supplied by the local power provider. The proposed project would require power for electrical enclosures, tracker motors, associated structures, and for lighting and security.

Project Features and Best Management Practices

The following sections describe standard project features and best management practices that would be applied during construction and long-term operation of the project to maintain safety and minimize or avoid environmental impacts.

Hazardous Waste and Hazardous Materials Management

The proposed project would have minimal levels of materials on-site that have been defined as hazardous under 40 CFR, Part 261. Materials such as the following would be used during the construction, operation, and long-term maintenance of the proposed project:

• Diesel fuel, gasoline and motor oil– used for electrical equipment



- Mineral oil to be sealed within the transformers
- Various solvents/detergents equipment cleaning
- Lead acid-based and/or lithium ion batteries used for emergency backup

Hazardous materials and wastes will be managed, used, handled, stored, and transported in accordance with applicable local and State regulations. All hazardous wastes will be maintained at quantities below the threshold requiring a Hazardous Material Management Program (HMMP) (one 55-gallon drum). Though not expected, should any on-site storage of hazardous materials exceed one 55-gallon drum, an HMMP would be prepared and implemented.

Chemical storage tanks (if any) would be designed and installed to meet applicable local and state regulations. Any wastes classified as hazardous such as solvents, degreasing agents, concrete curing compounds, paints, adhesives, chemicals, or chemical containers would be stored (in an approved storage facility/shed/structure) and disposed of as required by local and state regulations. Material quantities of hazardous wastes are not proposed or anticipated to be used.

Non-Hazardous Wastes/Inert Solids

Inert solid wastes resulting from construction activities may include recyclable items such as paper, cardboard, solid concrete and block, metals, wire, glass, type 1-4 plastics, drywall, wood, and lubricating oils. Non-recyclable items include insulation, other plastics, food waste, vinyl flooring and base, carpeting, paint containers, packing materials, and other construction wastes. A Construction Waste Management Plan will be prepared for review by the County. Consistent with local regulations and the California Green Building Code, the Plan would provide for diversion of a minimum of 50 percent of construction waste from landfills.

Spill Prevention and Containment

Spill prevention and containment for construction and operation of the proposed project will adhere to the Environmental Protection Agency's (EPA) guidance on Spill Prevention Control and Countermeasures (SPCC).

Wastewater/Septic System

No wastewater service is anticipated to be required. Portable facilities will be available during the construction phase and the nearby BigBeau Solar O&M facility will be available for operations employees.

Health and Safety

The proposed project would adhere to all Kern County Improvement Standards to ensure accessibility for emergency vehicles and safe operation during construction on project operation. The proposed project would implement measures for worker safety during construction in accordance with California Division of Occupational Safety and Health (CalOSHA) regulations and guidance and other best management practices. The proposed project will have an Emergency Response Plan (ERP). The ERP will address potential emergencies including chemical releases, fires, and injuries. All employees will be provided with communication devices, cell phones, or walkie-talkies, to provide aid in the event of an emergency.

To help ensure safety procedures are followed, the proposed project would include safety training for construction workers and operational personnel. This would include both classroom and hands-on training



in operating and maintenance procedures, general safety items, and the planned maintenance program. Training would include emergency procedures, fire prevention, and discussion of the location and proper use of emergency equipment. In addition, contact numbers for various local emergency response agencies, including fire, police, and medical services would be provided, and instruction for communication procedures to report potential health hazards and concerns would be a part of the training.

The proposed project also would include training on procedures in preventing electrical hazards that would reduce the potential for igniting combustible materials. The project also would limit areas where employees can smoke and parking areas for both personal and heavy equipment. Project operations would be provided over mineral soil, asphalt, or concrete and at a safe distance from dry vegetation. In addition, heavy equipment would also be equipped with other mechanisms such spark arresters or turbo-charging (which eliminates sparks in exhaust). Lastly, all project vehicles would be equipped with fire extinguishers, and training on their maintenance and how to extinguish small fires would be provided

As discussed above, these safety precautions and emergency systems would be implemented as part of, design, construction, operation, and maintenance of the proposed project to ensure safe and reliable operation.

Decommissioning

The project has an anticipated operational life of up to 35 years, after which the project proponent may choose to update site technology and recommission, or to decommission the site and remove the systems and their components. All decommissioning and restoration activities would adhere to the requirements of the appropriate governing authorities and in accordance with all applicable federal, State, and County regulations. At the end of the proposed project site's operational term, the applicant may determine that the proposed project site should be decommissioned and deconstructed, or it may seek an extension of its CUPs. Because the PV arrays' supporting equipment would sit on the surface of the land, the land would be largely unaltered from its natural state when the arrays are removed after the proposed project's lifetime. EDFR would work with the County to put an agreement in place to ensure the decommissioning of the proposed project site after its productive lifetime. It is anticipated that, during project decommissioning, project structures that would not be needed for subsequent use would be removed from the project site. Equipment would be de-energized prior to removal, salvaged (where possible), and shipped off-site to be recycled or disposed of at an appropriately licensed disposal facility. Once the solar modules are removed, the racks would be disassembled, and the structures supporting the racks would be removed. Site infrastructure would be removed, including fences, and concrete pads that may support the inverters, transformers and related equipment. The demolition debris and removed equipment may be cut or dismantled into pieces that can be safely lifted or carried by standard construction equipment. The fencing and gates would be removed, and all materials would be recycled to the extent practical. Project roads would be restored to their preconstruction condition unless they may be used for subsequent land use. The area would be thoroughly cleaned and all debris removed. Materials would be recycled to the extent feasible, with the remainder disposed of in landfills in compliance with all applicable laws. The site would revert to undeveloped land that supports agricultural production and wildlife habitat. The decommissioning and restoration process involves removing aboveground and belowground structures, restoring topsoil, revegetation, and seeding. Temporary erosion and sedimentation control BMPs would be used during the decommissioning phase.

The proposed project would use BMPs to ensure the collection and recycling of modules and batteries and to avoid the potential for modules and batteries to be disposed of as municipal waste.



1.5. Project Objectives

The project proponent had defined the following objectives for the project:

- The project would establish solar PV power-generating facilities that are of a sufficient size and configuration to provide approximately 270 MW of electricity to the California Independent System Operator (CAISO) grid and help to meet the increasing demand of the State of California for clean, renewable electrical power at a competitive cost.
- The project would enhance existing electrical distribution infrastructure and provide greater support to existing and future customer loads to ensure Southern California Edison can provide power to all customers, including customers in Kern County.
- Support California's efforts to reduce greenhouse gas (GHG) emissions consistent with the timeline established in 2006 under California Assembly Bill 32, the Global Warming Solutions Act of 2006, which requires the California Air Resources Board to reduce statewide emissions of GHGs to at least the 1990 emissions level by 2020. This timeline was updated in 2016 under SB 32, which requires that statewide GHG emissions are reduced to at least 40 percent below the statewide GHG emissions limit by 2030.
- Support California's aggressive RPS Program consistent with the timeline established by SB 100 (De León, also known as the "California Renewables Portfolio Standard Program: emissions of greenhouse gases"), as approved by the California legislature and signed by Governor Brown in September 2018, which increases RPS in 2030 from 50 percent to 60 percent and establishes a goal of 100 percent RPS by 2045.
- Develop an economically feasible and commercially financeable solar and battery storage energy project.
- Expand the reach of renewable energy development through the creation of high-capacity battery energy storage systems (BESS).
- Assist Kern County in promoting its role as the state's leading producer of renewable energy.
- Provide green jobs to Kern County residents and the state of California.
- Site and design the project in an environmentally responsible manner consistent with current Kern County guidelines by:
 - Locating generative facilities in a rural portion of southern Kern County which receives intense solar radiation;
 - O Using existing electrical transmission facilities, rights-of-way, roads, and other existing infrastructure where practicable;
 - o Minimizing water use; and
 - Reducing greenhouse has emissions.



1.6. Proposed Discretionary Actions/Required Approvals

The Kern County Planning and Natural Resources Department as the Lead Agency (per CEQA Guidelines Section 15052) for the proposed project has discretionary responsibility for the proposed project. To implement this project, the project proponent may need to obtain discretionary and ministerial permits/approvals including, but not limited to, the following:

Federal

- U.S. Fish and Wildlife Service (USFWS) Section 10 Incidental Take Permit and Habitat Conservation Plan (if required)
- United States Army Corps of Engineers Section 404 Permit (if required)
- Section 401 of the Clean Water Act certification or waiver

State

- California Department of Fish and Wildlife (CDFW)
 - o Section 1600 et seq. permits (Streambed Alteration Agreements) (if required)
 - o Section 2081 Permit (State-listed endangered species) (if required)
- Central Valley Water Quality Control Board (RWQCB)
 - Waste Discharge Requirements
 - o Regional Water Quality Certification (401 Permit) (if required)
 - National Pollution Discharge Elimination System (NPDES) Construction General Permit
 - General Construction Stormwater Permit (Preparation of a SWPPP)
- California Department of Transportation (Caltrans)
 - Right-of-Way Encroachment Permit (if required)
 - Permit for Transport of Oversized Loads

Local

• Kern County

- o Certification of Final Environmental Impact Report
- O Adoption of Mitigation Monitoring and Reporting Program
- Adoption of 15091 Findings of Fact and 15093 Statement of Overriding Considerations
- o Approval of Conditional Use Permits
- o Approval of General Plan Amendments to the Circulation Element



- o Approval of Specific Plan Amendments to Willow Springs Specific Plan
- Approval of Zone Changes
- Approval of a franchise agreement for a portion of one of the gen-tie lines that follows Tehachapi Willow Springs Road and Rosamond Boulevard
- o Approval of Exclusion from Agricultural Preserve 24
- o Approval of Vacation of Public Access Easements
- o Approval of Kern County Grading and Building Permits
- o Approval of Kern County Access Road Design and Encroachment Permits
- o Approval of Fire Safety Plan
- California Desert Native Plants Permit to Harvest Native Plants

• Eastern Kern Air Pollution Control District

- Approval of Fugitive Dust Control Plan
- Authority to Construct (ATC)
- o Permit to Operate (PTO)

The preceding discretionary actions/approvals are potentially required and do not necessarily represent a comprehensive list of all possible discretionary permits/approvals required. Other additional permits or approvals from responsible agencies may be required for the proposed project.

 \boxtimes

Air Quality



 \boxtimes

Aesthetics

2. Kern County Environmental Checklist Form

2.1. Environmental Factors Potentially Affected

 \boxtimes

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "potentially significant impact" as indicated by the Kern County Environmental Checklist on the following pages.

Agricultural and Forestry

\boxtimes	Biological Resources	\bowtie	Resourd Cultural Re		\boxtimes	Energy		
	Geology and Soils		Greenhouse Gas		\boxtimes	Hazards and Hazardous		
\boxtimes	Hydrology and Water	\boxtimes	Land Use and	Planning		Materials Mineral Resources		
	Quality Noise Recreation Utilities/Service Systems		Population and Transportation Wildfi	and Traffic		Public Services Tribal Cultural Resources Mandatory Findings of Significance		
	Determination completed by the Lead A	gency	·)					
On the	basis of this initial evalua	ation:						
	I find that the proposed pro DECLARATION will be I			significant eff	ect on the	environment, and a NEGATIVE		
	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.							
	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.							
	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (a) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (b) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENT IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.							
	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.							
Signature: /s/						Date: 11/22/2022		
Prin	ted Name:			-	_	Title:		
	Janice May	es		-	_	Planner III		



3. Evaluation of Environmental Impacts

- 1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
- All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- 3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
- 4. Negative Declaration: "Less than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less-than-Significant Impact." The lead agency must describe the mitigation measure and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).
- 5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration, Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
 - a. Earlier Analysis Used. Identify and state where they are available for review.
 - b. Impacts Adequately Addressed. Identify which effects from the above checklist where within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Incorporated," describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
- 6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
- 7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.



- 8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
- 9. The explanation of each issue should identify:
 - a. The significance criteria or threshold, if any, used to evaluate each question; and
- b. The mitigation measure identified, if any, to reduce the impact to a less than significant level.



		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
•	Aesthetics				
Wo	uld the project:				
a.	Have a substantial adverse effect on a scenic vista?	\boxtimes			
b.	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				
c.	In nonurbanized areas, substantially degrade the existing visual character or quality of the site and its surroundings? (Public views are those that are experienced from public accessible vantage points) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?				
d.	Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?				

RESPONSES:

(a-d) The aesthetic features of the existing visual environment in the project area are relatively uniform, with broad, dry, flat landscapes. The project site is generally surrounded by undeveloped land, agricultural land, rural residential, linear infrastructure corridors (transmission and aqueduct), as well as wind and solar development projects. The proposed project would be located on mostly undeveloped rangeland and previously farmed agricultural lands, consisting of privately owned parcels. The BigBeau Solar Project is being constructed to the immediate west, with start of operations anticipated for 2022, the Valentine Solar Project to the northwest, the Catalina Renewable Energy Project, and undeveloped lands are located to the north of the project site. There are buildings, fencing, and ancillary structures and features associated with low-density rural residential and farmland development within the vicinity of the project site. The surrounding cultural environment also consists of adjacent and nearby wind farms, with wind turbines found primarily in the hilly areas west of the project site. The project vicinity is also traversed by a network of paved and unpaved roads, trails from off-road vehicles, and transmission lines. In addition, the Pacific Crest Trail, a significant recreational resource, is approximately 6 miles west–southwest of the project site and has background views of the project site. The natural environment of the project site is largely undeveloped, with little vegetative cover (e.g., Mojave creosote bush scrub, Joshua trees, rabbitbrush scrub, desert saltbush scrub, fields/pastures, ruderal habitat), as well as fallow agricultural fields. No officially designated scenic vistas or scenic vistas identified by signage and accessible to the public have been identified in the project vicinity. However, the flat terrain allows for expansive views out



and over the desert landscape. Views from the surrounding hills and mountains, including the Pacific Crest Trail, also allow for viewpoints out and over the landscape.

While the project is consistent with the renewable energy development in the area, the proposed project would alter the landscape on the project site and portions of the project would be visible from public roads such as Tehachapi Willow Springs Road and Rosamond Boulevard. The solar arrays are designed to absorb sunlight to maximize electrical output; therefore, they are not anticipated to create significant reflective surfaces or the potential for glint/glare during the day.

The above project impacts will be further evaluated in the EIR.



		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
II.	Agriculture and Forest Resou	rces			
Woı	ald the project:				
a.	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?				
b.	Conflict with existing zoning for agricultural use or a Williamson Act Contract?				
c.	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				
d.	Result in the loss of forest land or conversion of forest land to non-forest use?				
e.	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				
f.	Result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 or Farmland Security Zone Contract for any parcel of 100 or more acres (Section 15205(b)(3) Public Resources Code)?				

RESPONSES:

(a) Portions of the project study area lie within an area designated as Important Farmland (i.e., land categorized as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland by the California Department of Conservation Farmland Mapping and Monitoring Program [FMMP]). No land within the project study area is designated as Prime Farmland. Generally, proposed gen-tie lines follow existing roads or transmission lines and do not cross agricultural lands. Any proposed gen-tie lines outside the project footprint that may be constructed on Important Farmland would be buried and not interfere with agricultural use. The above project impacts will be further evaluated in the EIR.

- (b) The project site and surrounding area includes land that is partially zoned as A (Exclusive Agriculture). According to the Kern County Zoning Ordinance, a commercial solar facility is a compatible use within the A zone district. The construction and operation of a solar energy generating facility on the site would require the approval of a CUP. Approximately 842 acres, or 62 percent, of the project site is within the Kern County Agricultural Preserve Number 24 boundary. Lying within an agricultural preserve is a prerequisite for placement under a Williamson Act contract. However, no parcels within the project study area are under any Williamson Act contracts. Nonetheless, the project will require a Petition for Exclusion to remove the portions of the project subject to the boundaries of Agricultural Preserve Number 24. The above project impacts will be further evaluated in the EIR.
- (c) No lands affected by the proposed project are zoned as forest land or timberland, or for timberland production. Therefore, the project would not conflict with existing zoning for, or cause the rezoning of, forest land, timberland, or timberland zoned for timberland production. Therefore, there would be no impact and further analysis in the EIR is not required.
- (d) The project site is neither situated on forest or timberland nor is located near any such areas that are currently under production. There is no land in the vicinity of the project site that is zoned as forest land, timberland, or lands zoned for timberland production. Therefore, there would be no impact related to the loss of forest land or conversion of forest land to non-forest use. No further analysis is warranted in the EIR.
- (e) As mentioned in responses (c) and (d), the project site is not designated as forest land and forest land or timberlands do not occur in the project vicinity. As mentioned in response (a) above, the project site does include lands classified as Unique Farmland and Farmland of Statewide Importance. The above project impacts will be further evaluated in the EIR.
- (f) The project site is not subject to an open space contract made pursuant to the California Land Conservation Act of 1965 or the Farmland Security Zone Contract. The project would therefore not result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 or Farmland Security Zone Contract for any parcel of 100 or more acres (Section 15205(b)(3) Public Resources Code). No impact would occur, and no further evaluation is required in the EIR.



		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
	Air Quality ere available, the significance criteria established le trol district shall be relied upon to make the followin				r pollution
a.	Conflict with or obstruct implementation of the applicable air quality plan?				
b.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard? Specifically, would implementation of the project exceed any of the following adopted thresholds:				
	i. San Joaquin Valley Unified Air Pollution Control District:				
	Operational and Area Sources Reactive organic gases (ROG): 10 tons per year.			\boxtimes	
	Oxides of nitrogen (NO _X): 10 tons per year. Particulate matter (PM ₁₀): 15 tons per year.			\boxtimes	
	Stationary Sources - as Determined by District Rules				
	Severe nonattainment: 25 tons per year. Extreme nonattainment: 10 tons per year.			\boxtimes	
	 ii. Eastern Kern Air Pollution Control District. Operational and Area Sources Reactive organic gases (ROG): 25 tons per year. 	\boxtimes			
	Oxides of nitrogen (NO_X): 25 tons per year. Particulate matter (PM_{10}): 15 tons per year.	\boxtimes			
	Stationary Sources – as Determined by District Rules				
	25 tons per year.	\boxtimes			
c.	Expose sensitive receptors to substantial pollutant concentrations?				
d.	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?				



RESPONSES:

(a-d) The project site is located entirely within the jurisdiction of the Eastern Kern Air Pollution Control District (EKAPCD), in the Mojave Desert Air Basin (MDAB). The MDAB is designated as a nonattainment area for both the State and federal ozone standards and the state particulate matter (PM₁₀) standard. Project construction would generate emissions of reactive organic gases (ROG) and oxides of nitrogen (NO_X), both of which are known as ozone precursors, and PM₁₀ that could result in significant impacts to air quality in the area.

EKAPCD's most recently adopted air quality management plan is its Ozone Air Quality Attainment Plan (Attainment Plan). As the proposed project would generate emissions of ozone precursors (along with PM₁₀) during construction, the project could potentially conflict with EKAPCD's Ozone AQAP. Thus, further analysis of the project's air quality impacts is warranted to determine whether the project would conflict with or obstruct implementation of EKAPCD's applicable air quality plan for attainment and, if so, to determine the reasonable and feasible mitigation measures that could be imposed. These issues will be evaluated in the EIR.

The proposed project is not located within the San Joaquin Valley Unified Air Pollution Control District and, therefore, its adopted thresholds do not apply. However, as noted in response (a) above, the project is located within the EKAPCD in the MDAB, which is designated as a nonattainment area for the State and federal ozone standards and the State PM₁₀ standard. As such, the emissions of ozone precursors (ROG and NOx) and PM₁₀ during construction and operation of the project could result in a cumulatively considerable net increase of these criteria pollutants in the MDAB. Thus, the project's contribution to cumulative air quality impacts in the MDAB could be potentially significant. The project's contribution of construction and operational emissions to the MDAB will be analyzed in the EIR

Sensitive receptors located in the project area are rural residential dwellings located at varying distances from the project site. Nearby sensitive receptors could be exposed to pollutant emissions during construction of the proposed project. The proposed project's construction-related activities would result in diesel exhaust emissions and dust (also known as PM₁₀) that could adversely affect air quality for the nearest sensitive receptors and will be further evaluation in the EIR.

Additionally, exposure to Valley Fever from fugitive dust generated during project construction is a potentially significant impact. There is the potential that cocci spores could be stirred up during excavation, grading, and earth-moving activities, exposing construction workers and nearby sensitive receptors to these spores and thereby to the possibility of contracting Valley Fever. Thus, impacts to sensitive receptors via exposure to substantial pollutant concentrations are considered potentially significant and will be evaluated further in the EIR.

The project would not have any stationary sources or equipment located on-site that would generate objectionable odors. During construction activities, only short-term, temporary odors from vehicle exhaust and construction equipment engines would occur. These odors would be temporary and would be dispersed rapidly. Therefore, project impacts are expected to be less than significant; however, this issue will be further evaluated in the EIR.



		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
V. Wo	Biological Resources uld the project:				
a.	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				
c.	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				
d.	Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				
f.	Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?				

RESPONSES:

(a-d) The project site contains undeveloped land, fallow agricultural lands, and natural vegetation consisting primarily of desert scrub habitat. There is a potential for candidate, sensitive, or special-status plants and wildlife species to be present on-site or in the project vicinity. The findings of field surveys conducted to determine the presence of candidate, sensitive, or special-status plant and animal species on-site and in the surrounding area will be included in the EIR.



The natural habitat onsite consists primarily of desert scrub; no riparian habitat was found to be present. Field surveys for sensitive natural communities will be completed and results incorporated into the EIR.

Potential federal or State-protected water-based resources such as streams and washes could be present on the project site and might be impacted by project construction activities. A determination as to whether the project site contains features under federal or State jurisdiction will be conducted as part of the EIR. Impacts to protected wetlands would be considered potentially significant. The project site and surrounding area may be used for migration or dispersal by some wildlife species. Project construction and operation could also remove foraging habitat.

These project impacts will be further evaluated in the EIR.

- (e) The CDFW has considered Joshua tree (*Yucca brevifolia*) to be a candidate species protected under California Endangered Species Act (CESA) since October 9, 2020. As a candidate species, Joshua tree now has full protection under CESA and any take of the species would require authorization under CESA. For projects where "take" is incidental to carrying out an otherwise lawful activity, an Incidental Take Permit (ITP) may be obtained from the CDFW. Scattered, widely spaced Joshua trees occur throughout portions of the proposed project site; however, they do not occur at a density high enough to consider them a distinct woodland community. Potential impacts to Joshua tree will be analyzed in the EIR. Additionally, sensitive natural plant community and compliance with the California Desert Native Plants Act of the California Food and Agricultural Code, Division 23, is required for the removal of cacti.
- (f) The project site is located within the U.S. Bureau of Land Management's (BLM) West Mojave Plan (WMP) planning areas. However, the WMP applies only to federal public lands managed by the BLM and is not an adopted Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP). The project site is also located within a BLM-designated Development Focus Area pursuant to BLM's Desert Renewable Energy Conservation Plan (DRECP). Development Focus Areas have been identified because of their potential for energy generation and minimal conflict with sensitive biological resources and are therefore more likely to be appropriate for renewable energy development. However, at this time the DRECP applies only to federal public lands managed by the BLM and is not an adopted HCP or NCCP. There are no anticipated impacts to these designated areas or plans because the project would not conflict with the provisions of an adopted HCP or NCCP.



		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
V. Wo	Cultural Resources				
a.	Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?				
b.	Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?				
c.	Disturb any human remains, including those interred outside of formal cemeteries?			\boxtimes	

RESPONSES:

(a-c) The project site consists of undeveloped but previously disturbed land. Development of the proposed project would require ground disturbance for grading, installation of the solar arrays, gen-tie line, other electrical improvements such as the BESS and placement of underground electrical and communications lines. The proposed project could potentially impact historical or cultural resources, including resources that are undiscovered or that may be buried underground. A cultural resources survey will be conducted for the proposed project as part of the EIR, to determine presence or potential presence of archaeological and historical resources and identify potential impacts to historical and/or archaeological cultural resources and to formulate avoidance or mitigation measures, if applicable.

There is no evidence that the project site is located within an area likely to contain human remains, and discovery of human remains during project earthmoving activities is not anticipated. Although, impacts to human remains are anticipated to be less than significant, inadvertent discovery of such remains is possible and this issue will be further evaluated in the EIR.



		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
VI.	Energy uld the project:				
a.	Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?				
b.	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			\boxtimes	

RESPONSES:

(a-b) Construction of the proposed project would involve on-site energy demand and consumption related to use of oil in the form of gasoline and diesel fuel for construction worker vehicle trips, hauling and materials delivery truck trips, and operation of off-road construction equipment. In addition, diesel-fueled portable generators may be necessary to provide additional electricity demands for temporary on-site lighting, welding, and for supplying energy to areas of the sites where energy supply cannot be met via a hookup to the existing electricity grid.

Following implementation of the proposed project, energy would switch from consumption to production. Operation of the proposed project would lead to an overall increase in the County's Renewable Portfolio and would align with the stated General Plan policy to encourage the development of renewable energy within Kern County.

The above listed project impacts will be further evaluated in the EIR.

Less than

		Potentially Significant Impact	Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
VII.	Geology and Soils				
a.	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				
	ii. Strong seismic ground shaking?			\boxtimes	
	iii. Seismic-related ground failure, including liquefaction?				
	iv. Landslides?				\boxtimes
b.	Result in substantial soil erosion or the loss of topsoil?				
c.	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onor off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?				
d.	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?				
e.	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?				
f.	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				
RESP	ONSES:				



(a-f) Due to the location of active faults in the general region, strong seismic ground shaking could occur at the project site, resulting in damage to above and below ground structures and other site improvements if not properly designed to withstand strong ground shaking. Construction of the proposed project would be subject to all applicable ordinances of the Kern County Building Code (Chapter 17.08). Kern County has adopted the California Building Standards Code (CBC) which imposes substantially similar requirements for design to resist strong ground motions as the International Building Code (IBC). Adherence to applicable regulations would minimize the potential impacts associated with the proposed project.

A Geology and Soils study of the project site will be conducted to determine the physical characteristics of the underlying soils and geologic formations and to identify if any unstable conditions exist that could be exacerbated by proposed construction activities. The results of these investigations will be provided in the EIR.

The project site is located in an area with sediments that are conducive to fossil preservation, including Holocene- to Pleistocene-age older alluvium and numerous fossils have been recorded in the region. A paleontological survey and study will be required for the proposed project to determine the potential for significant impacts.

The above listed project impacts will be further evaluated in the EIR.



		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
	. Greenhouse Gas Emissions ald the project:				
a.	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?				
b.	Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				

RESPONSES:

(a-b) Greenhouse gas (GHG) emissions emitted by human activity are implicated in global climate change or global warming. The principal GHGs are CO₂, methane (CH₄), NO_x, ozone, water vapor, and fluorinated gases. The temporary construction activities associated with the proposed project, which would involve operation of heavy off-road equipment, water conveyance, on-road trucks (for deliveries and hauling), and construction worker commute trips, would generate GHGs through exhaust emissions. However, as a solar facility, the proposed project is expected to displace traditional sources of electricity production that involve combustion energy sources (e.g., burning coal, fuel oil, or natural gas). As such, the production of solar energy by the proposed project would produce GHG-free electricity that is anticipated to offset GHGs that would otherwise be generated by traditional fuel combustion sources of electricity. The project's GHG emissions generated during construction of the project and the potential GHG offsets resulting from operation of the project, as well as any potential conflicts with any applicable plan, policy or regulation will be identified and quantified in the EIR and the project's potential GHG impacts, with respect to the objectives of statewide programs to reduce GHGs associated with energy generation will be examined in the EIR.



Less than

		Potentially Significant Impact	Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
IX.	Hazards and Hazardous Mate	rials			
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				
b.	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?				
c.	Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				
d.	Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				
e.	For a project located within the adopted Kern County Airport Land Use Compatibility Plan, would the project result in a safety hazard or excessive noise for people residing or working in the project area?				
f.	Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?				
g.	Expose people or structures, directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?				
h.	Would implementation of the project generate vectors (flies, mosquitoes, rodents, etc.) or have a component that includes agricultural waste?				
	Specifically, would the project exceed the following qualitative threshold:				
	The presence of domestic flies, mosquitoes, cockroaches, rodents, and/or any other vectors associated with the project is significant when the applicable enforcement agency determines that any of the vectors:				

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
	Occur as immature stages and adults in numbers considerably in excess of those found in the surrounding environment; and				
	Are associated with design, layout, and management of project operations; and			\boxtimes	
iii.	Disseminate widely from the property; and			\boxtimes	
iv.	Cause detrimental effects on the public health or well-being of the majority of the surrounding population.				

RESPONSES:

(a-b) Wastes that would be generated during construction of the proposed project would be non-hazardous, and would consist of materials such as cardboard, wood pallets, copper wire, scrap steel, common trash, and wood wire spools. Although field equipment used during construction activities could contain various hazardous materials (i.e., hydraulic oil, diesel fuel, grease, lubricants, solvents, adhesives, paints, etc.), these materials are not considered to be acutely hazardous, would be used in accordance with the manufacturer's specifications, and all applicable regulations. In addition, hazardous fuels and lubricants used on field equipment would be subject to a Construction Waste Management Plan and, if required, a Spill Prevention, Containment and Countermeasure Plan.

The operation of the proposed project would not involve the routine transport, use, or disposal of any hazardous materials as defined by the Hazardous Materials Transportation Uniform Safety Act. During construction, the proposed project would include the transport of general construction materials (i.e., concrete, wood, metal, fuel, etc.) as well as materials necessary to construct the proposed PV arrays.

Construction and operation of the proposed project may include the accidental release of storage materials, such as cleaning fluids and petroleum products including lubricants, fuels, and solvents. Potentials hazards associated with BESS include increased potential for electrical shock and chemical release associated with the batteries used.

Impacts resulting from the transport, use, or disposal of hazardous materials, or due to an accidental release of hazardous materials, during construction and operation of the proposed project will be evaluated further in the EIR.

(c) The closest school to the project site is the Tropico Middle School, located approximately 6 miles southeast of the project site. The project site is not located within one quarter mile of a school. Additionally, the proposed project is not anticipated to emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste. Therefore, there would be no impact and no further analysis is required in the EIR.

(d-f) Based on a review of the Cortese List Data Resources, there are no hazardous materials sites located on the project site.

The nearest public airport to the project site is the Rosamond Skypark located approximately 7 miles southeast of the project site. The project site is not located within any safety or noise zones for the Rosamond Skypark. Due to the nature of the proposed land use, impacts from air traffic hazards or excessive aircraft noise are not anticipated to occur for people residing or working in the project area with respect to the project's proximity to an airport. Therefore, there would be no impact and no further analysis is warranted in the EIR.

As required by routine and standard construction specifications administered by Kern County, road access would be maintained throughout construction, and appropriate detours would be provided in the event of potential road closures. Therefore, no impacts related to impairment of the implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan would occur during construction.

The small size of the operational work force would not generate significant traffic volumes during an emergency evacuation scenario that could complicate area-wide emergency evacuation efforts. No impacts are anticipated, further analysis of this issue in the EIR is not warranted.

(g-h) According to the California Department of Forestry and Fire Protection (CalFire), Kern County Fire Hazards Severity Zone Maps, the project site is not located within a Fire Hazard Severity Zone in a Local Responsibility Area (LRA) (CalFire, 2007). The proposed project would comply with all applicable wildland fire management plans and policies established by CalFire and the Kern County Fire Department. Accordingly, the proposed project is not expected to expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

Project-related facilities would not result in features or conditions that could potentially provide habitat for vectors such as mosquitoes, flies, cockroaches, or rodents. During construction and operation, workers would generate small quantities of solid waste (i.e., trash, food containers, etc.) that would be stored in enclosed containers, then transported to and disposed of at approved disposal facilities. Construction and operation of the proposed solar arrays and associated facilities would not produce uncontrolled wastes that could support vectors and would not generate any standing water or other features that would attract nuisance pests or vectors. Although impacts are anticipated to be less than significant, further analysis of this issue will be discussed in the EIR.

Less than

		Potentially Significant Impact	Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
X. Wo	Hydrology and Water Quality uld the project:				
a.	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?				
b.	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?				
c.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
	i. result in substantial erosion or siltation on- or off-site;				
	ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;				
	iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or				
	iv. impede or redirect flood flows?	\boxtimes			
d.	In flood hazard, tsunami, seiche zones, risk release of pollutants due to project inundation?				\boxtimes
e.	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				

RESPONSES:

(a-b) Construction of the project would be subject to County, State, and federal water quality regulations. The project site is located within the jurisdiction of the Lahontan Regional Water Quality Control Board (RWQCB). Project construction activities have the potential to result in erosion, sedimentation, and discharge of construction debris, and could result in the discharge of wastewater and runoff at the project site. During construction, potable water would be brought to the site for

- drinking and domestic needs. Non-potable water usage during construction, primarily for dust-suppression purposes, is not expected to exceed 200 acre-feet over the 18-month construction phase. A comprehensive hydrology and water quality impact analysis as well as a water supply assessment will be prepared, and the findings will be further analyzed in the EIR.
- (c) Construction and operational activities associated with the proposed project would alter existing drainage conditions and create impervious surfaces that would have the potential to result in an increase in the rate or amount of surface runoff during storm events A hydrologic study will be prepared for the project in accordance with Kern County requirements. Potentially significant impacts will be analyzed in the EIR.
 - During construction and following installation of the solar arrays, the majority of the site would remain as pervious surface. An estimated 11-acre feet per year of water is projected for operations associated with annual panel washing, dust suppression and fire suppression. It is anticipated that panels would be washed annually over a three-month period using a maximum of 8 acre-feet. The design of the solar arrays is such that storm water infiltration would occur similar to the existing conditions. No discharges to or alterations of any municipal stormwater drainage systems are proposed. Similarly, no component of the project would generate a substantial source of polluted runoff. The construction period Stormwater Pollution Prevention Plan (SWPPP) and the operational period Water Quality Management Plan would ensure the proper control and treatment, if necessary, of any storm water prior to discharge. This impact will be further discussed in the EIR.
- (d) The project is not located near an ocean or enclosed body of water, and therefore would not be subject to inundation by seiche or tsunami. Mudflows are a type of mass wasting or landslide, where earth and surface materials are rapidly transported downhill under the force of gravity and are often triggered by heavy rainfall and soil that is not able to sufficiently drain or absorb water and the supersaturation results in soil and rock materials to become unstable and slide away. Due to the relatively flat topography of the project site and surrounding area, the potential to be inundated by mudflow is considered remote.
 - According to the FIRMs for the project area, approximately 99 per cent of the project site is located in Flood Zone A, defined as an area subject to the 1 percent annual chance of flooding; also referred to as a 100-year flood event. As a result, the project could be subject to flooding however the construction would comply with construction and design specifications of the Kern County Floodplain Management Ordinance. The project would be reviewed by the Kern County Public Works Department for adherence to all applicable floodplain management standards. Because of the potential for flood hazards to occur, and related risk of release of pollutants due to project inundation, further analysis of this is required in the EIR.
- (e) The project site is located within the Antelope Valley Groundwater Basin which is an adjudicated basin, with all water rights having been previously prescribed. Ongoing management of this basin is governed by the Integrated Regional Water Management Plan (IRWMP). As such, all water usage for the project will conform to existing adjudication plans. A water supply assessment will be completed for the project to analyze potential impacts to groundwater resources, including any potential conflicts with the IRWMP. This impact will be further analyzed in the EIR.



		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
XI.	Land Use and Planning uld the project:				
a.	Physically divide an established community?				\boxtimes
b.	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation for the purpose of avoiding or mitigating an environmental effect?				

RESPONSES:

- (a) The project site is located on undeveloped, but previously disturbed land. The project area is predominantly developed with permitted solar and wind energy facilities and there are scattered rural residences located near or adjacent to the project site. The project site is located approximately 13 miles southwest of the unincorporated community of Mojave and approximately 5 miles west of the unincorporated community of Rosamond. The proposed project would not physically encroach into or divide or restrict access to the communities of Mojave or Rosamond. Therefore, impacts are considered to be less than significant and no further analysis in the EIR is warranted.
- (b) The project site is located within the Kern County General Plan area with portions of the project being located within the Willow Springs Specific Plan area. As shown on Figure 6, Existing General Plan Land Use Designations, the portion of the project site within the Kern County General Plan area is designated as Map Code 8.1 (Intensive Agriculture, Minimum 20 Acre Parcel Size), Map Code 8.3 (Extensive Agriculture, Minimum 20 Acre Parcel Size, Flood Hazard Overlay). No change to the existing land use designations of the Kern County General Plan is required. The portion of the project site within the Willow Springs Specific Plan area is designated as Map Code 5.3/4.4 (Residential -Maximum 10 Units per Net Acre/Comprehensive Planning Area), Map Code 5.5 (Residential-Maximum 10 Units per Net Acre); Map Code 5.6 (Residential-Min 2.5 Gross Acres/Unit), and Map Code 6.2/4.4 (General Commercial/Comprehensive Planning Area). The project proposes to amend the Land Use Element of the Willow Springs Specific Plan to remove the 4.4 (Comprehensive Planning Area) Map Code designation from the project area, where applicable.

The project study area includes both agriculture and residential estate zone districts as shown in **Figure 8**, *Existing Zoning Classifications*, above. Solar development is a conditionally permitted use in the Agriculture zone district per Chapters 19.12 and 19.14 of the Kern County Zoning Ordinance. Solar development is not a permitted use in residential zone districts like the Estate zoning district per Chapter 19.16 of the Zoning Ordinance. Therefore, approval of a zone change would be required to rezone portions of the project area classified within the Estate zone district to the Agriculture zone district for the construction and operation of the proposed project, with approval of the requested Conditional Use Permits (CUPs); see **Figure 8**, *Existing Zoning Classifications* and **Figure 9**, *Proposed Zoning Classifications*. The proposed Agriculture zoning classification of the project site is consistent with the existing and proposed Willow Springs Specific Plan map code designations.



An amendment to the Willow Springs Specific Plan Circulation Element is requested to eliminate future road reservations along portions of the section and mid-section lines within Section 1 in Zone Map 232 and Section 6 in Zone Map 231. Similarly, an amendment to the Kern County General Plan Circulation Element is requested to remove future road reservations along portions of the section lines within Sections 31, 32, and 33 in Zone Map 214 (See *Figure 11, Kern County and Willow Springs Circulation Changes*). This would allow solar panels to be placed throughout the site with no setbacks from the midsection line of future road reservations. However, the proposed project would not affect property owner access to any other surrounding properties.

The project proponent is requesting six CUPs to allow for the construction and operation of the proposed project; three CUPs to allow development of a solar facility within the Exclusive Agriculture zone district across three separate zone maps and an additional three CUPs to allow construction and operation of microwave communication tower in the Exclusive Agriculture zone district on the conditionally permitted sites in three separate zone maps. With approval of the zone change classifications and CUPs, the proposed project would be an allowable use within the Agriculture zone district. At the end of the project's operational term, the project proponent would determine whether the project site should be decommissioned and deconstructed or if it would seek an extension of the CUPs. If any portion of the project site is decommissioned, it would be converted to other uses in accordance with the applicable land use regulations in effect at that time.

With approval of the requested CUPs and zone change classifications, the proposed project is not anticipated to have the potential to conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. However, further assessment will be provided in the EIR.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
XII.	Mineral Resources uld the project:				
a.	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				
b.	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?				

RESPONSES:

- (a) The project site is neither designated as a mineral recovery area nor within a designated mineral and petroleum resource site by neither the Kern County General Plan nor by the Willow Springs Specific Plan. Additionally, the site is not identified as a mineral resource zone by the Department of Conservation's State Mining and Geology Board, nor has it been designated by the California Geologic Energy Management Division (formerly known as the Department of Oil, Gas and Geothermal Resources (DOGGR)) as a recognized oil field. Construction and operation of the proposed project would not interfere with mineral extraction and processing and would not have significant impacts on future mineral development. Therefore, it is determined that there would be no impacts to Mineral Resources and no further analysis is warranted in the EIR.
- (b) As mentioned previously, the project site is not located within a mineral recovery site designated by the Willow Springs Specific Plan or within a designated mineral and petroleum resource site within the Kern County General Plan. The project site is not located within the County's NR (Natural Resources) or PE (Petroleum Extraction) zoned districts. Therefore, the installation of the solar facilities would not preclude future mineral resource development nor would it result in the loss of a locally important mineral resource recover site. There would be no impact and no further analysis is warranted in the EIR.



Less than

		Potentially Significant Impact	Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
	. Noise				
a.	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?				
b.	Generation of excessive groundborne vibration or groundborne noise levels?				
c.	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				
d.	For a project located within the vicinity of a private airstrip or Kern County Airport Land Use Compatibility Plan, would the project expose people residing or working in the project area to excessive noise levels?				

RESPONSES:

(a-c) Land uses determined to be "sensitive" to noise as defined by the Kern County General Plan include residential areas, schools, convalescent and acute care hospitals, parks, recreational areas, and churches. The closest school to the site is the Tropico Middle School, located approximately 6 miles southeast of the project site. Rural residential homes are located in the project area and could be exposed to short-term construction and long-term operational noise, primarily associated with the battery energy storage system.

Noise generated by the proposed project would occur primarily during the construction phase whereas the long-term operation of the solar facility would be relatively quiet for the majority of the operation where the solar panels are located. Groundborne vibration and groundborne noise could originate from the operation of heavy off-road equipment and heavy-duty trucks delivering materials and machinery during the construction phase of the project. Operation of the proposed project would generate very little noise and would generate minimal noise from employee vehicle trips and work including repairs and maintenance of the facilities. Potential noise impacts during project construction and operations will be further analyzed in the EIR.

(d) The nearest public airport to the project site is the Rosamond Skypark located approximately 7 miles southeast of the project site. The project site is not located within any safety or noise zones for the Rosamond Skypark. Noise from occasional aircraft flyovers would not have a significant effect on the small workforce on-site who would normally be working indoors except when outdoor maintenance or repair activities are required. The proposed project would not generate any impacts



that could worsen the levels of aircraft noise. There would be no impacts and no further analysis of this issue is warranted in the EIR.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
	. Population and Housing uld the project:				
a.	Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				
b.	Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				

RESPONSES:

(a) Although the proposed project would provide new employment consistent with the adopted Kern County General Plan goals, plans, and policies, long-term employment opportunities would be minimal. Up to 15 part-time and/or full-time staff would operate the facility and would be located at the adjacent BigBeau Solar O&M building.

It is estimated that up to 627 workers per day would be required during peak construction periods for the proposed project. The entire construction process is anticipated to take 18 months. The majority of project-generated jobs would be from the local and regional area and would occur on a temporary and short-term basis. Construction workers are expected to travel to the site from various local communities and locations throughout Southern California and few, if any, workers are expected to relocate to the surrounding area because of these temporary jobs. If temporary housing should be necessary, it is expected that accommodations (i.e., extended stay hotels, apartments, RV parks, homes for rent or sale) would be available in the nearby communities of Rosamond, Mojave and Lancaster. Therefore, the project is not anticipated to directly or indirectly induce the development of any new housing or businesses within the local communities.

During the operational phase, the project would require up to 15 full- or part-time equivalent (FTE) personnel who would commute to the site. Due to the small number of full-time employees, it is anticipated that the local housing stock would be adequate to accommodate operations personnel should they relocate to the area, without requiring the need for the construction of new housing. The proposed project would not directly or indirectly induce substantial unplanned population growth and further analysis in the EIR is not warranted.

(b) The project site is currently undeveloped and does not contain any occupied housing units; some unoccupied residential structures do exist but would be removed prior to construction. These properties were acquired by EDFR for the purpose of the Bullhead Solar project. The proposed project would therefore not displace any existing people or housing, necessitating the construction of replacement housing elsewhere. No further evaluation of this issue is required in the EIR.



Less than

			Potentially Significant Impact	Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
XV.	Publ	ic Services				
Wou	ald the proj	ject:				
a.	associated physically for new facilities, significant maintain times, or	a substantial adverse physical impacts d with the provision of new or y altered governmental facilities, need or physically altered governmental the construction of which could cause at environmental impacts, in order to acceptable service ratios, response to other performance objectives for any blic services:				
	i.	Fire protection?	\boxtimes			
	ii.	Police protection?	\boxtimes			
	iii.	Schools?				\boxtimes
	iv.	Parks?				\boxtimes
	v.	Other public facilities?	\boxtimes			

RESPONSES:

- (a)(i) The Kern County Fire Department (KCFD) provides fire suppression and emergency medical services to the project area. The project site would be served by Fire Station #15, located at 3219 35th West Street in Rosamond. Adherence to all applicable regulations would reduce wildfire ignitions and prevent the spread of wildfires. However, construction and operation activities may result in increased demand for firefighting services in the area. Therefore, the potential impact on fire services from construction and operation of the project is considered potentially significant and will be further evaluated in the EIR.
- (a)(ii) Law enforcement and public safety services in the project area are provided by the Kern County Sheriff's Office (KCSO). The project site would be served by the Rosamond Substation at 3179 35th Street West. Although the potential is low, the proposed project may attract vandals or other security risks, and construction activities would result in increases in traffic volumes along surrounding roads, which could increase demand on law enforcement services. On-site security measures (i.e., on-site monitoring equipment, gated access, motion sensor lighting) would be provided and access to the project site during construction and operation would be restricted, thereby minimizing the need for law enforcement services. Nonetheless, project impacts on local sheriff services could be potentially significant. This issue will be evaluated in the EIR.
- (a)(iii) It is expected that most of the construction workers would live in the broader region and commute to the project site from surrounding communities where their children are already enrolled in school and where their contribution to local taxes, including funds for schools, is assessed locally. The



proposed project would not require employees or their children to relocate to the project area. Therefore, substantial temporary increases in population that would adversely affect local school populations are not expected. Likewise, the operational workforce is small (approximately 15 partor full-time positions) and not expected to generate a permanent increase in population that would impact school populations. Therefore, no significant impacts to schools are anticipated to occur and further analysis is not warranted in the EIR.

- (a)(iv) The population increase that would be experienced during the construction phase of the proposed project would be temporary and limited to construction workers at the project site. Such conditions would not result in a substantial new demand for parks or recreational facilities. The number of employees required for project operations would be minimal and they would not likely frequent any public parks during, before, or after their work shifts. The 15 part- or full-time equivalent (FTE) employees would not result in construction of new housing units that could significantly increase the local population and related demand for public parkland. Therefore, no significant impacts to parks are anticipated to occur, and further analysis of this issue is not warranted in the EIR.
- (a)(v) Implementation of the proposed project may have impacts on the ability of the County to provide adequate county-wide comprehensive public facility services. Unlike other businesses in California, large scale solar has an exclusion from property taxes on their equipment. This property tax exclusion results in the project not providing the revenue needed to provide services and facilities for both the project and the communities that prevent decline of the physical neighborhoods in unincorporated Kern County. This is a direct impact from the project structure and the land if built with another type of land use would produce property tax revenue to provide necessary services and facilities and prevent physical decline of homes and businesses due to vacancy and inability for response for all services, including code enforcement to law enforcement, fire, roads and health and safety issues such as elderly care and child protection services. The cumulative impacts of this active solar tax exclusion over the life of the over 36,000 acres of projects within the County has resulted in a loss to the General Fund over the last 10 years of over \$103 million and deepened the on-going fiscal emergency of the County. Public policies in the Kern County General Plan and Willow Springs Specific Plan require development to address economic deficiencies in public services and facilities costs. Therefore, the proposed project's impacts on public facilities are potentially significant and will be evaluated in the EIR.



I acc than

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
	I. Recreation				
Wo	ould the project:				
a.	Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				
b.	Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?				

RESPONSES:

- It is estimated that up to 627 workers per day during peak construction periods would be required on-(a) site during construction of the proposed project. The construction phase is anticipated to last 18 months. These temporary workers would not have time to visit any local parks or recreation facilities during the workday. Further, few workers are expected to relocate to this area temporarily while the construction is underway and there would be little or no impact on local recreational resources after work hours. Operation of the proposed project would require employees for maintenance and monitoring activities, but they would likely be drawn from the local labor force and would commute from their existing permanent residences to the project site. However, even if the maintenance/monitoring employees were hired from out of the area and relocated to eastern Kern County, the addition of any such families to the project area would not result in a substantial increase in the number of users at local parks or recreational facilities. As a result, there would not be a detectable increase in the use of existing neighborhood or regional parks or other recreational facilities, and therefore, no deterioration of any such facilities would occur or require the construction of new facilities as a result of project implementation. Impacts would not occur, and further analysis is not warranted in the EIR.
- (b) The proposed project does not include or require the construction of new or expansion of existing recreational facilities, and there are no recreational facilities on the project site that would be affected. No impact would result and no further analysis in the EIR is warranted.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
	I. Transportation and Traffic				
a.	uld the project: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?				
b.	Conflict or be inconsistent with CEQA Guidelines Section 15064.3 subdivision (b)?				
c.	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			\boxtimes	
d.	Result in inadequate emergency access?			\boxtimes	

RESPONSES:

(a) There are no dedicated pedestrian or bicycle facilities in the immediate vicinity of the project site or along the surrounding roadways. Due to the rural nature of the project area, pedestrian and bicycle traffic is limited. The project is not located along an existing bus route and few bus stops exist on roadways that are likely to be used during construction and operation of the proposed project.

Further analysis in the EIR is required to determine whether construction traffic could disrupt normal traffic flows or otherwise conflict with the County's roadway performance policies and programs.

During operation, the proposed project would require up to 15 part- or full-time employees who would commute to and from the site and would result in an addition of average daily trips. Ongoing maintenance and periodic repair to the solar development are also anticipated to produce negligible traffic impacts. These potential impacts on the local roadway system from construction related vehicle trips and the project's operational traffic on the area roadway system will be further evaluated in the EIR.

(b) CEQA Guidelines section 15064.3, subdivision (b) was adopted in December 2018 by the California Natural Resources Agency. These revisions to the CEQA Guidelines criteria for determining the significance of transportation impacts are primarily focused on projects within transit priority areas and shift the focus from driver delay to reduction of vehicular greenhouse gas emissions through creation of multimodal networks, and creation of a mix of land uses that can facilitate fewer and shorter vehicle trips. Vehicle miles traveled (VMT) is a measure of the total number of miles driven for various purposes and is sometimes expressed as an average per trip or per person. Construction traffic would be temporary and would not permanently affect VMT characteristics in this part of Kern County or elsewhere. Long-term, operational traffic would be limited, with a small work force of approximately 15 part- or full-time equivalent employees. It is not known where the employees would

live or how long their commuting trips would be. According to technical guidance issued by the Office of Planning and Research, projects generating less than 110 or fewer daily vehicle trips may be presumed to have a less than significant impact involving VMT. Further analysis of the operational VMT characteristics of the project is required to determine whether the project is considered a "low-VMT" project due to small daily traffic volumes alone, or whether more extensive analysis is warranted. An assessment of the project's VMT characteristics will be provided in the EIR, to ensure consistency with state and local guidance.

- (c) The proposed project would be regionally accessed from SR-14 to the east. During construction, especially during peak periods of heavy truck traffic and peak levels of construction workers, there is a potential for conflicts between construction traffic and normal traffic flows, especially at intersections where queuing could occur. This requires further analysis in the EIR.
 - No new roadway design or features (i.e., sharp curves, dangerous intersections, or other hazardous features) would be required that could result in transportation-related hazards or safety concerns. No new roads are proposed for access to the project; primary access would be from existing public Tehachapi Willow Springs Road and secondary access could be provided by 120th Street West via the adjacent and previously permitted Big Beau Solar Project. New internal access roads and circulation would be designed to assure safe ingress/egress to county roads. The project buildings and other structures would be set back from roadways as required by the Kern County Zoning Ordinance. Given these considerations, significant impacts related to increased hazards are not anticipated to occur; however, additional analysis will be included in the EIR.
- (d) Emergency vehicle access must be maintained at all times throughout construction activities, in accordance with the County's routine/standard construction specifications. Further, construction activities would not be permitted to impede emergency access to any local roadways or surrounding properties. Construction period impacts are considered less than significant but will be further analyzed in the EIR.

Although no significant operational impacts related to emergency access are anticipated to occur, further analysis of this issue will be provided in the EIR.

Less than

			Potentially Significant Impact	Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
	II.Trik	pal Cultural Resources				
a.	change resource section cultura in term sacred	the project cause a substantial adverse in the significance of a tribal cultural ce, defined in Public Resources Code 21074 as either a site, feature, place, I landscape that is geographically defined as of the size and scope of the landscape, place, or object with cultural value to a mia Native American tribe, and that is:				
	i.	Listed or eligible for listing in the California Register of Historical Resources, or in a local register or historical resources as defined in Public Resources Code section 5020.1(k), or				
	ii.	A resource determined by the lead agency in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.				

RESPONSES:

(a)(i), (a)(ii) Since the project site is undeveloped, there is a potential for tribal cultural resources to exist either on-site or on surrounding lands. Therefore, the proposed project has the potential to directly or indirectly impact tribal cultural resources during site clearance and earthmoving activities or from long-term development of the site. All tribes with possible cultural affiliation and interest within the project area will be notified pursuant to the requirements of Assembly Bill 52, and consultation with the potentially affected tribes will occur, as appropriate, between the County and the tribes. Further evaluation in the EIR is warranted to identify potential impacts to tribal cultural resources and to formulate avoidance or mitigation measures, if applicable.

I acc than

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
	Utilities and Service Systems				
a.	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?				
b.	Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				
c.	Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				
d.	Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?				
e.	Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				

RESPONSES:

- (a) The proposed project would not require or result in the relocation or construction of new or expanded municipal wastewater facilities, and no connection to a public wastewater system is required or proposed. The proposed project does not require expanded or new storm drainage facilities because the proposed solar facility would not generate a significant increase in the amount of impervious surfaces that would increase runoff during storm events. The proposed project is not anticipated to result in a significant increase in water demand/use; however, water will be needed for solar panel washing and dust suppression. Impacts would be less than significant in this regard; however, further analysis in the EIR will be provided.
- (b) Water demand for long-term operational demands (panel washing, dust and fire suppression) is not expected to exceed 11 acre-feet per year during operation. Water usage during construction, primarily for dust-suppression purposes, is not expected to exceed 200 acre-feet over the 18 month construction phase. Water is anticipated to be obtained from on-site wells during construction or delivered via



- truck from an off-site source(s) for operations. A water supply assessment will be completed for the project to analyze potential water sources and potential impacts to water supplies. This potentially significant impact will be addressed further in the EIR.
- (c) No septic system or wastewater disposal is proposed for the project; wastewater generated during the operations phase would be accommodated in the adjacent BigBeau Solar O&M facility that was previously evaluated for that project. Therefore, the project would not adversely affect any existing wastewater treatment facilities and further analysis of this issue is not warranted in the EIR.
- (d) The proposed project is not expected to generate a significant amount of solid wastes because of the small number of workers and the absence of activities that would generate wastes on an ongoing basis. It is not anticipated that the amount of solid waste generated by the proposed project would exceed the capacity of local landfills needed to accommodate the waste. Impacts are anticipated to be less than significant and no further analysis in the EIR is warranted.
- (e) The proposed project would generate solid waste during construction, operation, and decommissioning, thus requiring the consideration of waste reduction and recycling measures. Further analysis of the pertinent solid waste reduction and management regulations applicable to this project will be included in the EIR.



Less than

		Potentially Significant Impact	Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
class	Wildfire cated in or near state responsibility areas or lands sified as very high fire hazard severity zones, lld the project:				
a.	Substantially impair an adopted emergency response plan or emergency evacuation plan?				
b.	Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				
c.	Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				
d.	Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				

RESPONSES:

- a) The project site is not identified for any purpose in an adopted emergency evacuation plan to address wildfires or other types of emergencies. Emergency evacuation plans would not be impacted by the proposed project.
- b) According to the California Department of Forestry and Fire Protection (CalFire), Kern County Fire Hazards Severity Zone Maps, the project site is not located within a Fire Hazard Severity Zone. Therefore, the potential for wildfire on the project site does not exist. The site is located in a rural, sparsely developed area with limited population. Slope, prevailing winds, and other factors, would not exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire, as the area is not listed as within a Fire Hazard Severity Zone.
- c) Adherence to applicable regulations would reduce wildfire ignitions and prevent the spread of wildfires. The proposed project involves the development of a solar energy generation and battery energy storage facility, along with associated facilities including power transmission lines (gen-tie lines), a substation and inverters. Impacts are anticipated to be potentially significant for wildfires in association with battery energy storage facilities and associated infrastructure, therefore further analysis in the EIR is warranted.



d) The project site is not considered to be a high risk area for landslides as it is relatively flat; therefore, there would be no impacts involving landslides or other slope failures, or other drainage changes that would expose people or structures to significant risks in a post-wildfire burned landscape condition. No further analysis is warranted in the EIR relative to this issue.

T 41.

		Potentially Significant Impact	Significant with Mitigation Incorporated	Less-than Significant Impact	No Impact
XXI	Mandatory Findings of Signifi	cance			
a.	Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?				
b.	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)				
c.	Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?				

RESPONSES:

- (a) The EIR's biological, cultural, and tribal cultural resources sections will discuss specific project impacts on plants and wildlife, including avian species, and impacts to cultural and tribal cultural resources. The document will also evaluate the project's contribution to cumulative biological, cultural, and tribal cultural resources impacts and propose mitigation that will reduce the impacts, where feasible.
- (b) The project has the potential to contribute to cumulatively significant aesthetics, air quality, biological resources, cultural resources, tribal cultural resources, greenhouse gas emissions, traffic, noise, and wildfire impacts. Such impacts could occur during the construction phases and/or as a result of the fully built and operational project. The EIR will evaluate the project's contribution to cumulative impacts in these and other areas.
- (c) The proposed project would not result in long-term air pollutant emissions that would adversely affect nearby sensitive receptors, however it could result in long-term impacts to sensitive noise receptors. The solar facility would not include any kind of industrial processes or equipment that would generate



hazardous substances or wastes that would threaten the well-being of people on- or off-site. However, short-term construction activities could result in temporary increases in pollutant concentrations and potentially significant off-site noise impacts. Pollutants of primary concern commonly associated with construction-related activities include toxic air contaminants, gaseous emissions of criteria pollutants, and fugitive dust. Within the project area, the potential for increased occurrences of Valley Fever is also of concern. Human health impacts from the short-term cumulative contribution to air quality impacts from project construction will be further evaluated in the EIR.



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NATIVE AMERICAN HERITAGE COMMISSION

November 22, 2022

Janice Mayes Kern County Planning and Natural Resources Department 2700 M Street, Suite 100 Bakersfield, CA 93301

Re: 2022110504, Bullhead Solar Project by EDF Renewables, LLC, Kern County

Dear Ms. Mayes:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015. If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). Both SB 18 and AB 52 have tribal consultation requirements. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

- 7. <u>Conclusion of Consultation</u>: Consultation with a tribe shall be considered concluded when either of the following occurs:
 - **a.** The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
 - **b.** A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).
- 8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).
- 9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).
- **10.** Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
 - a. Avoidance and preservation of the resources in place, including, but not limited to:
 - i. Planning and construction to avoid the resources and protect the cultural and natural context.
 - **ii.** Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
 - **b.** Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
 - i. Protecting the cultural character and integrity of the resource.
 - ii. Protecting the traditional use of the resource.
 - iii. Protecting the confidentiality of the resource.
 - **c.** Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
 - d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).
 - e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
 - **f.** Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).
- 11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
 - **a.** The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
 - **b.** The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
 - **c.** The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation CalEPAPDF.pdf

- 3. Contact the NAHC for:
 - **a.** A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
 - **b.** A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.
- **4.** Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
 - **a.** Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
 - **b.** Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
 - **c.** Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Cameron.Vela@nahc.ca.gov.

Sincerely,

Camaran Vala

Cameron Vola

Cameron Vela Cultural Resources Analyst

cc: State Clearinghouse

Native American Heritage Commission 1550 Harbor Blvd., Stc. 100 West Sacramento, CA 95691 State of California





Kern County Planning & Natural Resources Dept.



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Gavin Newsom, Governor David Shabazian, Director 715 P Street, MS 1803 Sacramento, CA. 95814 T: (916) 445-5986

12/13/2022

Janice Mayes 2700 M Street, Suite 100, Bakersfield, CA 93301, USA mayesj@kerncounty.com

Construction Site Well Review (CSWR) ID: 1012664

Assessor Parcel Number(s): 34603210, 34603212, 34603215, 34603220, 34603221, 34603253, 34624026, 31501101, 31501104, 31501105, 31501106, 31501108, 31501109, 31501111, 31501151, 31501158, 31501160, 31501161, 31505040, 35805201, 35805103

Property Owner(s): EDF Renewables, LLC

Project Location Address: North and south of Dawn Road west of Sierra Hwy 14 between 105th Street West and 75th Street West, Rosamond, California 93501

Project Title: Bullhead Solar Project

Public Resources Code (PRC) § 3208.1 establishes well reabandonment responsibility when a previously plugged and abandoned well will be impacted by planned property development or construction activities. Local permitting agencies, property owners, and/or developers should be aware of, and fully understand, that significant and potentially dangerous issues may be associated with development near oil, gas, and geothermal wells.

The California Geologic Energy Management Division (CalGEM) has received and reviewed the above referenced project dated 12/5/2022. To assist local permitting agencies, property owners, and developers in making wise land use decisions regarding potential development near oil, gas, or geothermal wells, the Division provides the following well evaluation.

The project is located in Kern County, within the boundaries of the following fields:

N/A

Our records indicate there are no known oil or gas wells located within the project boundary as

identified in the application.

Number of wells Not Abandoned to Current Division Requirements as Prescribed by Law and

Projected to Be Built Over or Have Future Access Impeded by this project: 0

Number of wells Not Abandoned to Current Division Requirements as Prescribed by Law and

Not Projected to Be Built Over or Have Future Access Impeded by this project: 0

Number of wells Abandoned to Current Division Requirements as Prescribed by Law and

Projected to Be Built Over or Have Future Access Impeded by this project: 0

Number of wells Abandoned to Current Division Requirements as Prescribed by Law and Not

Projected to Be Built Over or Have Future Access Impeded by this project: 0

As indicated in PRC § 3106, the Division has statutory authority over the drilling, operation,

maintenance, and abandonment of oil, gas, and geothermal wells, and attendant facilities, to prevent,

as far as possible, damage to life, health, property, and natural resources; damage to underground oil,

gas, and geothermal deposits; and damage to underground and surface waters suitable for irrigation or

domestic purposes. In addition to the Division's authority to order work on wells pursuant to PRC §§

3208.1 and 3224, it has authority to issue civil and criminal penalties under PRC §§ 3236, 3236.5, and

3359 for violations within the Division's jurisdictional authority. The Division does not regulate grading,

excavations, or other land use issues.

If during development activities, any wells are encountered that were not part of this review, the

property owner is expected to immediately notify the Division's construction site well review engineer in

the Inland district office, and file for Division review an amended site plan with well casing diagrams.

The District office will send a follow-up well evaluation letter to the property owner and local permitting

agency.

Should you have any questions, please contact me at (661) 201-8607 or via email at

Victor.Medrano@conservation.ca.gov.

Sincerely, Muant hule

Chuku Chuku for

Chris Jones

Acting District Deputy

cc: Janice Mayes - Submitter

Page 2

California Department of Transportation

DISTRICT 9
500 SOUTH MAIN STREET | BISHOP, CA 93514
(760) 874-8330 | FAX (760) 872-0678 TTY 711
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12/16/2022

Ms. Janice Mayes Planner III Kern County Planning and Natural Resources Dept. 2700 "M" Street, Suite 100 Bakersfield, CA. 93301

Dear Ms. Mayes:

The California Department of Transportation (Caltrans) District 9 appreciates the opportunity to comment during the NOP phase for the Draft Environmental Impact Report (DEIR) for the Bullhead Solar Project. We offer the following:

- There are two possible construction haul routes on SR 14. They are SR 14 and Backus Road interchange (north of the project) and SR 14 and Rosamond Blvd (south of the project). If the primary haul route is Rosamond Blvd, Caltrans would like to review the trip analysis for the project and possibly request that construction haul trips be made outside of commuting hours for schools and Edwards AFB shift changes.
- During Construction, how many Vehicles and equipment will be accessing SR 14 and how often will these trips occur?
- Because there are several other solar projects proposed for this area, the
 cumulative impacts this project will contribute to may be important to look at.
 Caltrans will continue to work with Kern Planning to fulfill the need for funding
 and to mitigate these future impacts.
- The Kern Regional Transportation Plan (RTP) and the Kern County Circulation element has a future bike path proposed for Mojave Tropico road. Please calculate this project's fair share portion that would help with costs of this and any other improvements. For a full list of projects, you can access the RTP at: https://www.kerncog.org/category/docs/rtp/ and the Circulation Element at https://kernplanning.com/planning/planning-documents/general-plans-elements/. What Impact fees or other fair share fees will the developer pay towards this improvement? We request a meeting to discuss ways to fully fund and deliver these improvements.

Ms. Janice Mayes 12/16/2022 Page 2

We value our ongoing cooperative working relationship with Kern County Planning and Natural Resources Department for eastern Kern County's transportation system and look forward to review of your draft EIR. If you have any questions, please feel free to contact me at (760) 938-2288 or rick.franz@dot.ca.gov.

Sincerely,

Rick Franz Associate Transportation Planner



State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4005
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

December 22, 2022

Janice Mayes
Kern County Planning and Natural Resources Department
2700 M Street, Suite 100
Bakersfield, California 93301
(661) 862-8612
mayesj@kerncounty.com

Subject: Bullhead Solar Project by EDF Renewables, LLC Project (Project)
Notice or Preparation (NOP)
State Clearinghouse No. 2022110504

Dear Janice Mayes:

The California Department of Fish and Wildlife (CDFW) received a Notice of Preparation (NOP) for an Environmental Impact Report (EIR) from Kern County Planning and Natural Resources Department (Kern County), as Lead Agency, for the Bullhead Solar Project by EDF Renewables, LLC Project (Project) pursuant the California Environmental Quality Act (CEQA) and CEQA Guidelines.¹

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, CDFW appreciates the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (*Id.*, § 1802). Similarly, for

¹ CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), related authorization as provided by the Fish and Game Code will be required.

Fully Protected Species: CDFW has jurisdiction over fully protected species of birds, mammals, amphibians, reptiles, and fish pursuant to Fish and Game Code sections 3511, 4700, 5050, and 5515. Take of any fully protected species is prohibited and CDFW cannot authorize their incidental take.

Protected Furbearing Mammals: CDFW has jurisdiction over furbearing mammals pursuant to Title 14, California Code of Regulations, section 460, which states "Fisher, marten, river otter, desert kit fox, and red fox may not be taken at any time". This includes all forms of take as defined in Fish and Game Code section 86. CDFW cannot authorize the take of desert kit fox.

Nesting Birds: CDFW has jurisdiction over actions with potential to result in the disturbance or destruction of active nest sites or the unauthorized take of birds. Fish and Game Code sections that protect birds, their eggs, and nests include 3503 (regarding unlawful take, possession or needless destruction of the nest or eggs of any bird), 3503.5 (regarding the take, possession or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful take of any migratory nongame bird).

Unlisted Species: Species of plants and animals need not be officially listed as Endangered, Rare, or Threatened (E, R, or T) on any State or Federal list to be considered E, R, or T under CEQA. If a species can be shown to meet the criteria for E, R, or T, as specified in the CEQA Guidelines section 15380, CDFW recommends it be fully considered in the environmental analysis for the Project.

As a responsible agency, CDFW is responsible for providing, as available, biological expertise during public agency environmental review efforts (e.g., CEQA), focusing specifically on project activities that have the potential to adversely affect fish and

wildlife resources. CDFW provides recommendations to identify potential impacts and possible measures to avoid or reduce those impacts.

PROJECT DESCRIPTION SUMMARY

Proponent: EDF Renewables, LLC

Objective: The Project proposes to construct and operate a photovoltaic (PV) solar facility which would generate up to 270 megawatts (MW) of renewable electrical energy with a battery energy storage system (BESS) capable of storing approximately 270 MW or 1,080 megawatt-hours (MWh) of storage capacity. The proposed Project includes the installation of solar development with associated PV panels, battery storage, inverters, converters, generators, foundations, transformers, and preferred and optional generation-tie (gen-tie) routes to the Rosamond and Whirlwind Substations, only one of which would be constructed. The Project also includes laydown yards, a meteorological station, a microwave/ communication tower, and a substation.

Location: The proposed Project is located on approximately 1,342 acres of privately owned parcels in the southern unincorporated area of Kern County within Section 1 of Township 9 North, Range 14 West; Sections 5 and 6 of Township 9 North, Range 13 West; and Sections 31, 32, and 33 of Township 10 North, Range 13 West in the San Bernardino Base and Meridian (SBB&M). State Route (SR)-58 is approximately 12 miles southwest of the Project site and SR-138 (West Avenue D) is approximately 9 miles to the south in Los Angeles County. The Project site is located east and west of Tehachapi-Willow Springs Road, generally bounded by Favorito Avenue to the south, Champagne Avenue to the north, 105th Street West and the Big Beau Solar Project to the west, and 75th Street West to the east.

Timeframe: Construction would begin in the third quarter of 2024 and would extend for approximately 18 months into 2026.

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist Kern County in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct, and indirect impacts on fish and wildlife (biological) resources. Editorial comments or other suggestions may also be included to improve the Draft EIR.

Aerial imagery of the Project boundary and its surroundings show the area contains several natural habitats including creosote bush scrub, rubber rabbitbrush scrub, allscale scrub, agricultural/fallow fields, ruderal forbs, and developed/disturbed areas, all of which may have suitable habitat for special-status species. Based on a review of the Project description, a review of California Natural Diversity Database (CNDDB) records,

and the surrounding habitat, several special-status species could potentially be impacted by Project activities.

The Project area is within the geographic range of several special-status animal species including the State threatened Mohave ground squirrel (Xerospermophilus mohavensis): the State fully protected and State and federally endangered California condor (Gymnogyps californianus); the State fully protected golden eagle (Aquila chrysaetos); the State threatened Swainson's hawk (Buteo swainsoni): the State fully protected white-tailed kite (Elanus leucurus); the State and federally threatened desert tortoise (Gopherus agassizii): the State candidate for listing Crotch bumble bee (Bombus crotchii) and western Joshua tree (Yucca brevifolia); the State species of special concern American badger (Taxidea taxus); the State protected furbearing mammal desert kit fox (Vulpes macrotis arsipus); the State species of special concern burrowing owl (Athene cunicularia), pallid bat (Antrozous pallidus), spotted bat (Euderma maculatum), Tehachapi pocket mouse (Perognathus alticola inexpectatus), Townsend's big-eared bat (Corynorhinus townsendii), Tulare grasshopper mouse (Onychomys torridus tularensis), western mastiff bat (Eumops perotis californicus), LeConte's thrasher (Toxostoma lecontei), loggerhead shrike (Lanius Iudovicianus), long-eared owl (Asio otus), mountain plover (Charadrius montanus), northern harrier (Circus hudsonius), and California legless lizard (Anniella pulchra); and the Watch List species California horned lark (*Eremophila alpestris actia*) and prairie falcon (*Falco mexicanus*).

Additionally, the Project area is within the geographic range of several special status plant species including the California Rare Plant Rank (CRPR) 1B.2 alkali mariposa-lily (Calochortus striatus), CRPR 1B.1 Horn's milk-vetch (Astragalus hornii var. hornii), CRPR 1B.2 recurved larkspur (Delphinium recurvatum), CRPR 1B.1 Rosamond eriastrum (Eriastrum rosamondense), and CRPR 2B.2 sagebrush loeflingia (Loeflingia squarrosa var. artemisiarum). Finally, the Project is within the geographic range of many migratory and non-migratory nesting birds.

Mohave Ground Squirrel (MGS)

The Project site is near the edge of the known geographic range of MGS and historical occurrences have been documented within approximately 6.5 miles of the Project area (CDFW 2022, CDFW 2019a). Mohave ground squirrel are known to utilize open desert scrub and Joshua tree habitats for foraging, denning, and cover (CDFW 2019b). The Project site contains desert scrub habitat in a portion of the site and therefore MGS could potentially utilize these habitats if they are deemed suitable.

CDFW recommends that a qualified biologist conduct a habitat assessment as part of the biological technical studies conducted in support of the Draft EIR. If potentially suitable habitat is identified, consultation with CDFW is recommended for guidance on

developing project specific MGS survey methodology to be conducted as part of the biological technical studies.

Fully Protected Raptors

The fully protected California condor, golden eagle, and white-tailed kite have the potential to nest and/or forage in the Project vicinity (CDFW 2022). CDFW recommends that a qualified biologist conduct a habitat assessment for fully protected raptors within the Project area and a 0.5-mile buffer surrounding the Project area as part of the biological studies conducted in support of the Draft EIR. If suitable habitat is determined to be present, CDFW recommends that focused surveys be conducted for California condor and white-tailed kite, and that surveys be conducted in accordance with protocols developed by the United States Fish and Wildlife Service (USFWS 2010) for golden eagle, as part of the biological technical studies. If surveys indicate the presence or potential presence of fully protected raptors, consultation with the CDFW is recommended for guidance on the development of take avoidance measures.

Swainson's Hawk (SWHA)

The Project proponent provided the Swainson's Hawk Status, Impacts, and Proposed Mitigation for the Bullhead Solar Project, Kern County, CA Letter Report (SWHA Letter Report) on August 19, 2022 detailing the results of protocol SWHA surveys conducted during the 2021 breeding season. The SWHA Letter Report identified 11 nests within five miles of the Project site that were active within the past five years. Additionally, three of these nests were identified along the northwestern boundary of the Project site and within 0.5-mile of potential Project-related impacts. The Project proponent also provided the Swainson's Hawk Telemetry Analysis, Bullhead Solar Project, Kern County, CA Letter Report (SWHA Telemetry Report) to CDFW on September 7, 2022 detailing the results of telemetry analyses conducted for a female SWHA that successfully nested in 2022 at one of the three active nests documented within the Project. The Project proponent consulted with CDFW on August 29 and December 9. 2022 to discuss SWHA and receive CDFW's input on the development of avoidance, minimization, and mitigation measures to be included as part of the proposed Project. As detailed in the SWHA Letter Report, previous conversations between the Project proponent and CDFW, and confirmed via aerial imagery, the habitat types present within and adjacent to the Project site provide suitable foraging and nesting habitat for SWHA.

In addition to the surveys that have been conducted for the SWHA Letter Report, CDFW recommends the Draft EIR include the following measures:

Recommended Mitigation Measure 1: SWHA Cumulative Impact Analysis
The SWHA population within the Antelope Valley is particularly susceptible to
extirpation due the small number of breeding pairs and extensive isolation from other
SWHA populations (CEC and CDFW 2010). Additionally, past, present, and
proposed renewable energy projects are reducing the amount of available foraging
and nesting habitat for SWHA within the Antelope Valley. Three active SWHA nests
were identified within the Project site and one of the nests successfully fledged
chicks in 2022, thus the Project has the potential for significant cumulative impacts
to SWHA. As such, CDFW recommends that the Draft EIR include a robust
cumulative impacts analysis for SWHA using an appropriate methodology to analyze
cumulative impacts.

Recommended Mitigation Measure 2: SWHA Surveys Prior to Construction
Depending on the time between the initial survey efforts conducted in support of the
Draft EIR and Project construction, CDFW recommends that additional surveys,
following the survey methodology developed by the California Energy Commission
(CEC) and CDFW in the Swainson's Hawk Survey Protocols, Impact Avoidance, and
Minimization Measures for Renewable Energy Projects in the Antelope Valley of Los
Angeles and Kern Counties, California (CEC and CDFW 2010) protocol be repeated
the survey seasons immediately prior to construction.

Recommended Mitigation Measure 3: SWHA Take Authorization

CDFW recommends that a 0.5-mile no-disturbance buffer be implemented around active nests during the SWHA nesting season to avoid take (see Recommended Mitigation Measure 4 below); however, as three active nests were identified within the Project site, one nest successfully fledged chicks in 2022, take avoidance appears infeasible. CDFW recommends the Project pursue take authorization through the acquisition of an Incidental Take Permit (ITP), pursuant to Fish and Game Code section 2081 subdivision (b) in order to comply with CESA.

Recommended Mitigation Measure 4: SWHA Avoidance Buffer

If Project-specific activities will take place during the SWHA nesting season (i.e., March 1 through September 15), CDFW recommends a minimum ½-mile nodisturbance buffer be delineated and maintained around each active nest (including the three documented in the SWHA Letter Report), regardless of whether it was detected by surveys or observed incidentally. These buffers would remain in place until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival, to prevent nest abandonment and other take of SWHA as a result of Project activities.

Recommended Mitigation Measure 5: SWHA Foraging Habitat Mitigation
Finally, CDFW recommends compensation for the loss of SWHA foraging habitat as
described in the Swainson's Hawk Survey Protocols, Impact Avoidance, and
Minimization Measures for Renewable Energy Projects in the Antelope Valley of Los
Angeles and Kern Counties, California protocol (CEC and CDFW 2010) to reduce
impacts to foraging habitat to less than significant. The protocol recommends that
mitigation for suitable habitat loss within a five-mile radius of an active SWHA nests
occur at a minimum 2:1 ratio.

Desert Tortoise (DT)

The Project site is within known geographic range of DT and a recent occurrence has been documented approximately 2 miles north of the Project site (CNDDB 2022). DT are most common in desert scrub, desert wash, and Joshua tree habitats (CDFW 2018a). Based on aerial imagery, several portions of the Project site contain desert scrub communities which may have the potential to support DT.

CDFW recommends that focused DT surveys are conducted following the protocol contained in "Preparing for any action that may occur within the range of the Mojave desert tortoise (*Gopherus agassizii*)" (USFWS 2019) as part of the biological studies conducted in support of the Draft EIR. Survey results should be submitted to both CDFW and the United States Fish and Wildlife Service (USFWS). If surveys indicate the presence or potential presence of desert tortoise, consultation with CDFW and USFWS is recommended for guidance on mitigation measures such as avoidance, minimization, and mitigation.

Crotch bumble bee (CBB)

CBB was re-listed as an endangered candidate species under CESA (Fish & G. Code, § 2050 et seq.) on September 30, 2022. During the candidacy period, consistent with CEQA Guidelines section 15380, the status of the CBB qualifies it as an endangered, rare, or threatened species under CEQA. It is unlawful to engage in take of listed or candidate species except as authorized pursuant to CESA. Under Fish and Game Code section 86, take means to hunt, pursue, catch, capture, or kill, or to attempt to hunt pursue, catch, capture, or kill. Consequently, take of CBB during the status review period is prohibited unless authorization pursuant to CESA (Fish & G. Code, § 2081, subd. (b)) is obtained.

The Project site is within known geographic range of CBB and there are a number of recent observations surrounding the Project area (CAS 2022, Xerces et al. 2022). CBB are known to inhabit areas of grasslands and scrub that contain requisite habitat elements for nesting, such as small mammal burrows and bunch/thatched grasses. The

Project site contains desert scrub habitat in a portion of the site and therefore CBB could potentially utilize these habitats if they are deemed suitable.

CDFW recommends a qualified biologist conduct a habitat assessment as part of the biological technical studies conducted in support of the Draft EIR to determine if the Project area or its immediate vicinity contain habitat suitable to support CBB. Potential nesting sites, which include all small mammal burrows, perennial bunch grasses, thatched annual grasses, brush piles, old bird nests, dead trees, and hollow logs would need to be documented as part of the assessment. If potentially suitable habitat is identified, coordination with CDFW is recommended for guidance on developing focused CBB survey methodology to be conducted as part of the biological technical studies.

Western Joshua Tree (WJT)

Western Joshua tree is a candidate species pursuant to CESA. During the candidacy period, consistent with CEQA Guidelines section 15380, the status of the western Joshua tree as a candidate species under CESA (Fish & G. Code, § 2050 et seq.) qualifies it as an endangered, rare, or threatened species under CEQA. The Project site is within known geographic range of WJT and based upon information provided in the NOP and available aerial photography, WJT are present within the desert scrub habitat located within the Project site.

CDFW recommends that a qualified botanist conduct focused WJT surveys to identify the number and size class (less than 1-meter in height, 1-meter or greater but less than 4-meters, and 4-meters or greater in height) of all western Joshua trees on and within 290-feet of the Project site as part of the biological technical studies conducted in support of the Draft EIR. This information is used to inform the location of nodisturbance buffers, and if necessary, the amount of habitat compensation required to reduce impacts to less than significant. In addition to the focused WJT surveys, CDFW recommends the Draft EIR include the following measures:

Recommended Mitigation Measure 6: WJT Avoidance Buffer

CDFW recommends a no-disturbance buffer for individual western Joshua trees of 290 feet. A 290-foot buffer is warranted to not only avoid impacts to individual trees, but potential impacts to the seed bank as well. Vander Wall et al. (2006) documented 290 feet as a maximum distance of seeds dispersed by rodents. If a 290-foot buffer cannot be maintained, then consultation with CDFW is warranted to determine if the Project can avoid take or if take authorization is necessary as described below.

Recommended Mitigation Measure 7: WJT Take Authorization

If a 290-foot buffer around each individual WJT is not feasible, CDFW recommends that consultation with CDFW occur to discuss how to implement the Project and avoid take. If take cannot be avoided, take authorization through the acquisition of an ITP, pursuant to Fish and Game Code section 2081 subdivision (b) is necessary to comply with CESA.

American Badger (AMBA)

The Project site is within the known geographic range of AMBA and a historical occurrence has been documented approximately 0.5 mile south of the Project site (CNDDB 2022). AMBA occupy sparsely vegetated land cover with dry, friable soils to excavate dens, which they use for cover, and that support fossorial rodent prey populations (i.e., ground squirrels, pocket gophers, etc.) (Zeiner et. al 1990). Based on aerial imagery, the majority of the Project site potentially contains habitat suitable for AMBA.

CDFW recommends that a qualified biologist assess the presence/absence of AMBA by conducting a focused field survey in all areas of potentially suitable habitat as part of the biological studies conducted in support of the Draft EIR. If surveys indicate the presence or potential presence of AMBA, consultation with the CDFW is recommended for guidance on mitigation measures such as avoidance, minimization, and mitigation.

Desert Kit Fox (DKF)

The Project site is within the known geographic range of DKF. DKF are known to inhabit sparsely vegetated scrub habitats within the California desert that support small mammal populations (McGrew 1979). Based on aerial imagery, the majority of the Project site potentially contains suitable habitat for DKF denning and foraging.

CDFW recommends that a qualified biologist assess the presence/absence of DKF by conducting a focused field survey in all areas of potentially suitable habitat as part of the biological studies conducted in support of the Draft EIR. If surveys indicate the presence or potential presence of DKF, consultation with the CDFW is recommended for guidance on take avoidance measures.

Burrowing Owl (BUOW)

The Project site is within known geographic range of BUOW and a recent occurrence has been documented approximately 0.3 mile west of the Project site (CNDDB 2022). BUOW inhabit open grasslands and desert scrublands containing small mammal burrows, a requisite habitat feature used by BUOW for nesting and cover. Based on

aerial imagery, the majority of the Project site potentially contains habitat suitable for BUOW foraging and nesting.

CDFW recommends assessing presence/absence of BUOW by having a qualified biologist conduct surveys following the California Burrowing Owl Consortium's (CBOC) "Burrowing Owl Survey Protocol and Mitigation Guidelines" (CBOC 1993) and CDFW's "Staff Report on Burrowing Owl Mitigation" (CDFG 2012) as part of the biological studies conducted in support of the Draft EIR. If surveys indicate the presence or potential presence of burrowing owl, consultation with CDFW is recommended for guidance on mitigation measures such as avoidance, minimization, and mitigation.

Bats

The Project site is within the known geographic range of several species of native bat, including species of special concern (SSC) pallid bat, Townsend's big-eared bat, spotted bat, and western mastiff bat. Several occurrences of Townsend's big-eared have been documented approximately 5.0 miles west and north of the Project area (CDFW 2022). Bats are known to roost in mines, caves, rocky outcrops, bridges, trees, and buildings that provide the required localized climatic conditions and surrounding foraging opportunities needed. The Project site may contain suitable habitat for roosting and likely contains suitable habitat for foraging.

To evaluate Project-related impacts on bats, CDFW recommends that a general habitat and roosting assessment for bats be conducted as part of the biological technical studies conducted in support of the Draft EIR.

Other State Species of Special Concern

The Project site is within the known geographic range of SSC Tehachapi pocket mouse, Tulare grasshopper mouse, and California legless lizard and these species have been documented within the Project vicinity (CNDDB 2022).

To evaluate Project-related impacts to these species, CDFW recommends that a general habitat assessment be conducted as part of the biological technical studies conducted in support of the Draft EIR.

Other Special Status Plant Species

The Project site is within the known geographic range of several special status plant species including, Horn's milk-vetch, alkali mariposa-lily, recurved larkspur, Rosamond eriastrum, and sagebrush loeflingia and these species were documented historically within the Project vicinity (CDFW 2022). The creosote bush scrub, rubber rabbitbrush scrub, allscale scrub and ruderal forbs habitats located on the Project site may contain

suitable habitat to support special status plant species, including the species mentioned above.

CDFW recommends that the Project site(s) be surveyed for special-status plants by a qualified botanist following the "Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities" (CDFW 2018b) as part of the biological technical studies conducted in support of the Draft EIR. This protocol, which is intended to maximize detectability, includes the identification of reference populations to facilitate the likelihood of field investigations occurring during the appropriate floristic period. If surveys indicate the presence or potential presence of special status plants, consultation with CDFW is recommended for guidance on mitigation measures such as avoidance, minimization, and mitigation.

Nesting Birds

The Project site is within the known geographic range of several species of migratory and non-migratory birds, including SSC LeConte's thrasher, loggerhead shrike, long-eared owl, mountain plover, and northern harrier, and watch list species California horned lark, and prairie falcon (CDFW 2022). The creosote bush scrub, rubber rabbitbrush scrub, allscale scrub, agricultural/fallow fields, ruderal forbs, and developed/disturbed areas located on the Project site potentially suitable habitat for an abundance of nesting migratory and non-migratory bird species, including the species mentioned above.

To evaluate Project-related impacts on nesting birds, CDFW recommends that a general habitat assessment for nesting birds be conducted as part of the biological technical studies conducted in support of the Draft EIR.

Editorial Comments and/or Suggestions

Federally Listed Species: CDFW recommends consulting with USFWS regarding potential impacts to federally listed species including but not limited to the California condor and DT. Take under the Federal Endangered Species Act (FESA) is more broadly defined than CESA; take under FESA also includes significant habitat modification or degradation that could result in death or injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or nesting. Consultation with the USFWS in order to comply with FESA is advised well in advance of any Project activities.

Lake and Streambed Alteration: Based on aerial imagery, the Project area appears to contain features indicating multiple streams and drainages may be present, particularly within the eastern portion of the Project site. The NOP states a determination of potential federal and State jurisdiction features will be conducted as

part of the EIR. If streams, swales, or drainages occur on the Project site, Project activities may be subject to CDFW's regulatory authority pursuant to Fish and Game Code section 1600 et seq. Fish and Game Code section 1602 requires an entity to notify CDFW prior to commencing any activity that may (a) substantially divert or obstruct the natural flow of any river, stream, or lake; (b) substantially change or use any material from the bed, bank, or channel of any river, stream, or lake (including the removal of riparian vegetation): (c) deposit debris, waste or other materials that could pass into any river, stream, or lake. "Any river, stream, or lake" includes those that are ephemeral, intermittent, or episodic as well as those that are perennial.

CDFW is required to comply with CEQA in the issuance of a Lake or Streambed Alteration Agreement; therefore, if the Draft EIR approved for the Project does not adequately describe the Project and its impacts to lakes or streams, a subsequent CEQA analysis may be necessary for LSA Agreement issuance. For information on notification requirements, please refer to CDFW's website (https://wildlife.ca.gov/Conservation/LSA) or contact CDFW staff in the Central Region Lake and Streambed Alteration Program at (559) 243-4593 or RRR.R4@wildlife.ca.gov.

Artificial Lighting: Installation of outdoor artificial night lighting can disrupt the circadian rhythms of many wildlife species. Many species use photoperiod cues for communication, determining when to begin foraging, thermoregulation behavior, and migration (Longcore and Rich 2004, Miller 2006, Nightingale et al. 2006, Perry et al. 2008, Stone et al. 2009). Phototaxis, a phenomenon which results in attraction and movement towards light, can disorient, entrap, and temporarily blind wildlife species that experience it (Longcore and Rich 2004). Project activities could result in disruption of wildlife behavior, inadvertent injury, or mortality.

CDFW recommends that the Draft EIR for the Project include an analysis of artificial lighting as it relates to biological resources and incorporate enforceable mitigation measures to decrease the impacts of artificial outdoor lighting on wildlife species. Potentially feasible mitigation measures include: motion sensitive lighting; mounting light fixtures as low as possible to minimize light trespass; use of light fittings that direct and confine the spread of light downward; and use of long-wavelength light sources. In addition, CDFW recommends that lighting is not installed in ecologically sensitive areas (e.g., streams, wetlands, and habitat used by special status species, such as nesting/roosting sites and riparian corridors) and the use of the white/blue wavelengths of the light spectrum be avoided.

Wildlife Movement and Connectivity: The Project area supports significant biological resources and contains habitat connections and supports movement across the broader landscape, sustaining both transitory and permanent wildlife populations. CDFW recommends that on-site features that contribute to habitat connectivity should be evaluated and maintained. Aspects of the Project that could create physical barriers to

wildlife movement, including direct or indirect Project-related activities, should be identified, and addressed in the Draft EIR.

Project Alternatives Analysis: CDFW recommends that the information and results obtained from the biological technical surveys, studies, and analysis conducted in support of the Project's Draft EIR be used to develop and modify the Project's alternatives to avoid and minimize impacts to biological resources to the maximum extent possible. When efforts to avoid and minimize have been exhausted, CDFW advises that remaining impacts to sensitive biological resources be mitigated to reduce impacts to a less than significant level, if feasible.

Cumulative Impacts: CDFW recommends that a cumulative impact analysis be conducted for all biological resources that will either be significantly or potentially significantly impacted by implementation of the Project, including those whose impacts are determined to be less than significant with mitigation incorporated or for those resources that are rare or in poor or declining health and will be impacted by the Project, even if those impacts are relatively small (i.e., less than significant). Cumulative impacts are recommended to be analyzed using an acceptable methodology to evaluate the impacts of past, present, and reasonably foreseeable future projects on resources and be focused specifically on the resource, not the Project. An appropriate resource study area should also be identified and mapped for each resource being analyzed and utilized for this analysis. In addition to the recommended SWHA cumulative impacts analysis above, CDFW recommends closely evaluating the need for a cumulative impacts analysis for the following species as part of the Draft EIR due to these species being in poor or declining health or at risk: MGS, California condor, golden eagle, white-tailed kite, DT, CBB, WJT, AMBA, DKF, BUOW, pallid bat, spotted bat, big-eared bat, Tulare grasshopper mouse, western mastiff bat, LeConte's thrasher, loggerhead shrike, long-eared owl, mountain plover, northern harrier, California legless lizard, California horned lark, prairie falcon, Horn's milk-vetch, Alkali mariposa-lily, recurved larkspur, Rosamond eriastrum, and sagebrush loeflingia. CDFW staff is available for consultation in support of cumulative impacts analyses as a trustee and responsible agency under CEQA.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database, which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special-status species and natural communities detected during Project surveys to the CNDDB. The CNDDB field survey form can be found at the following link:

https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data. The completed form can be mailed electronically to CNDDB at the following email address:

CNDDB@wildlife.ca.gov. The types of information reported to CNDDB can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089).

CONCLUSION

CDFW appreciates the opportunity to comment on the NOP to assist Kern County Planning and Natural Resources Department in identifying and mitigating Project impacts on biological resources.

If you have any questions, please contact Jeremy Pohlman, Senior Environmental Scientist (Specialist), at the address provided on this letterhead, by telephone at (805) 503-2375 or by electronic mail at Jeremy.Pohlman@wildlife.ca.gov.

Sincerely,

Julie A. Vance

DocuSigned by:

Regional Manager

REFERENCES

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Attachment 1

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE RECOMMENDED MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

PROJECT: Bullhead Solar Project

SCH No.: 2022110504

RECOMMENDED MITIGATION MEASURE	STATUS/DATE/INITIALS	
Before Disturbing Soil or Vegetation		
SWHA		
Recommended Mitigation Measure 1: SWHA cumulative impact analysis		
Recommended Mitigation Measure 2: SWHA surveys prior to construction		
Recommended Mitigation Measure 3: SWHA take authorization		
Recommended Mitigation Measure 5: SWHA foraging habitat mitigation		
WJT		
Recommended Mitigation Measure 7: WJT Take Authorization		
During Construction		
SWHA		
Recommended Mitigation Measure 4: SWHA avoidance buffer		
WJT		
Recommended Mitigation Measure 6: WJT avoidance buffer		

1 Rev. 2013.1.1

Glen E. Stephens, P.E. Air Pollution Control Officer

November 30, 2022

Janice Mayes, Planner III Kern County Planning and Natural Resources Department 2700 "M" Street, Suite 100 Bakersfield, CA 93301

SUBJECT: Comments for Initial Study/Notice of Preparation for Bullhead Solar Project (PP22404)

Dear Ms. Mayes:

Eastern Kern Air Pollution Control District (District) is in receipt of the Initial Study/Notice of Preparation for the Bullhead Solar Project by EDF Renewables, LLC.

The facility would be adjacent to Tehachapi-Willow Springs Road for 1.4 miles; the prevailing wind direction in the area (west to east) would likely blow any fugitive dust from the western portion of the project toward the road, potentially creating a hazard for vehicles traveling on Tehachapi-Willow Springs Road. Special attention should be given when developing mitigation measures to ensure fugitive dust does not create hazardous driving conditions on Tehachapi-Willow Springs Road during construction and operation of the facility.

Thank you for you cooperation in this matter. Should you have any questions, please telephone Samuel Johnson our office at (661) 862-5250.

Sincerely,

Glen E. Stephens, P.E.

Air Pollution Control Officer

GES:SJ:tf

EASTERN KERN AIR POLLUTION CONTROL DISTRICT

2700 "M" Street, Suite 302 Bakersfield, CA 93301

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12/01/2022 13:00**51/AGE \$000**.572

ZIP 93301 041L12205143

Kern County Planning & Natural Resources Dept.

Janice Mayes, Planner III
Kern County Planning and Natural Resources
Department
2700 "M" Street, Suite 100
Bakersfield, CA 93301

Section of the sectio

Office of the Fire Marshal Kern County Fire Department Fire Prevention Unit



2820 M St. • Bakersfield, CA 93301 • www.kerncountyfire.org Telephone 661-391-3310 • FAX 661-636-0466/67 • TTY Relay 800-735-2929

December 2, 2022

Kern County Planning and Natural Resources Department 2800 M St., Bakersfield, CA 93301 Attn.: Janice Mayes

Re: Kern County Fire Department Comments Regarding Planning Department Project

To Whom It May Concern,

The Kern County Fire Department (KCFD), as the local fire authority, has received a request for comments regarding Bullhead Solar Project (PP22404). Upon initial review, it has been determined that all ground mounted solar array projects over 1MW will require Fire Department plan review prior to construction and meet requirements set forth in KCFD Solar Panel Standard. Solar array projects over 20MW will require special fee calculation from KCFD prior to permit issuance. All Battery Energy Storage Systems must be applied for directly with KCFD for separate permitting and pre-construction approval. All proposed batteries must be UL9540A 2019 4th Edition tested for large scale burns to determine adequate design and mitigation measures.

A more detailed review and project comments will be conducted when the building permit is pulled and plans are submitted to KCFD.

Please feel free to call our Fire Prevention Office at 661-391-3310 with any questions.

Sincerely, Michael Nicholas Assistant Fire Marshal Kern County Fire Department

Office Memorandum

KERN COUNTY

To: Planning and Natural Resources Date: December 2, 2022

Department Janice Mayes

From: Public Works Department Phone: (661) 862-5098

Floodplain Management Section Email: BlaseB@kerncounty.com Kevin Hamilton, by Brian Blase

Subject: Preparation of Draft Environmental Impact Report

Bullhead Solar Project

Our section has reviewed the attached subject documents and has the following comments:

The runoff of storm water from the site will be increased due to the increase in impervious surface generated by the proposed development.

The subject property is subject to flooding.

Therefore, this section recommends the following be included as Conditions of Approval for this project:

The applicant shall provide a plan for the disposal of drainage waters originating on site and from adjacent road right-of-ways (if required), subject to approval of the Public Works Department, per the Kern County Development Standards.

Associated flood hazard requirements will need to be incorporated into the design of this project per the Kern County Floodplain Management Ordinance.

Superintendent of Schools ____

RECEIVED

DEC 0 9 2022

Kern County Planning & Natural Resources Dept. Office of Mary C. Barlow ... advocates for children

December 2, 2022

Kern County Planning Department Attn: Janice Mayes, Planner III 2700 M Street, Suite 100 Bakersfield, CA 93301

Our File No.: CO22-0169

RE: DEVELOPER FEES FOR: Notice of Preparation - Draft EIR for Bullhead Solar Project; (North & south of Dawn Rd, west of Sierra Hwy 14 between 105th St. West & 75th St. West.)

Dear Ms. Mayes,

This office represents the Southern Kern Unified School District with regard to the imposition of developer fees, and appreciates the opportunity to respond on behalf of the district regarding the proposed project. This letter is limited to addressing the possible effects which the project might have on school facilities created by students attributable to the project. It is not intended to address other possible environmental concerns which might be identified by the district after reviewing it.

It is our determination that the above mentioned project proposing the Bullhead Solar Project to include (a) Specific Plan Amendments to the Land Use Element of the Willow Springs Specific Plan (b) Changes in Zone Classifications to A FPS (Exclusive Agriculture, Flood Plain Secondary Combining) and, (c) multiple Conditional Use Permits to allow the construction and operation of solar facilities and a microwave telecommunication tower, (d) multiple Amendments to the Circulation Element of the Willow Springs Specific Plan to remove future road reservations on section and mid-section lines, (e) Petition for Exclusion from the Boundaries from Agricultural Preserve 24 and; (f) non-summary vacation of various public access easements in and around the project site will have no significant effects on either of these district's facilities so long as statutory school facilities fees, if any, are collected as required by law and that no further mitigation measures regarding school facilities are necessary.

Thank you for the opportunity to comment on the project. Should you have any questions, or if we can be of any further assistance in this matter, please contact me at 636-4599, or through e-mail at anwatson@kern.org.

Sincerely,

Mary C. Barlow County Superintendent of Schools

Andrea Watson, Specialist School District Facility Services

cALW cc: District(s) CRAIG M. POPE, P.E., DIRECTOR ADMINISTRATION & HUMAN RESOURCES FINANCE & ENGINEERING BUILDING & CODE OPERATIONS



2700 "M" STREET, Suite 400 BAKERSFIELD, CA 93301-2370

Phone: 28959

Phone: (661) 862-5000 FAX: (661) 862-8851 Toll Free: (800) 552-5376 Option 5 TTY Relay: (800) 735-2929

December 20, 2022

To: Lorelei Oviatt, Director Planning and Natural Resources Department

Janice Mayes, Planner III

From: Brian Blacklock, County Surveyor By: Andres Arias, Engineering Tech III

Subject: Notice of Preparation of Draft Environmental Impact Report for Bullhead Solar Project by EDF Renewables, LLC (PP22404)

I have reviewed the above noted project Notice of Preparation of DEIR and recommend the following conditions be placed on the Conditional Use Permits:

- 1. <u>Prior to issuance of a building or grading permit:</u> All survey monuments shall be tied out by a Licensed Land Surveyor. A corner record for each monument or record of survey shall be submitted to the County Surveyor for review and processing, per Section 8771 of the Professional Land Surveyor's (PLS) Act.
- 2. <u>Prior to Final Inspection:</u> All survey monuments that were destroyed during construction shall be re-set or have a suitable witness corner set. A post construction corner record for each monument re-set or a record of survey shall be submitted to the County Surveyor for processing, per Section 8771 of the Professional Land Surveyor's Act.
- 3. <u>Upon completion of project:</u> All survey monuments shall be accessible by a Licensed Land Surveyor or their representatives, with prior notice, per Section 8774 of the PLS Act and Civil Code 846.5 (a).

Thank you for the opportunity to review and comment on this project. Should you have any questions please contact me.

ADAMS BROADWELL JOSEPH & CARDOZO

A PROFESSIONAL CORPORATION

ATTORNEYS AT LAW

601 GATEWAY BOULEVARD, SUITE 1000 SOUTH SAN FRANCISCO, CA 94080-7037

TEL: (650) 589-1660 FAX: (650) 589-5062 sshankel@adamsbroadwell.com SACRAMENTO OFFICE

520 CAPITOL MALL, SUITE 350 SACRAMENTO, CA 95814-4721

TEL: (916) 444-6201 FAX: (916) 444-6209

November 23, 2022

Via Email and U.S. Mail

KEVIN T. CARMICHAEL

CHRISTINA M. CARO

THOMAS A. ENSLOW

KELILAH D. FEDERMAN

RICHARD M. FRANCO

ANDREW J. GRAF

TANYA A. GULESSERIAN RACHAEL E. KOSS

AIDAN P. MARSHALL

TARA C. RENGIFO

Of Counsel
MARC D. JOSEPH
DANIEL L. CARDOZO

Lorelei Oviatt, Director Planning and Natural Resources County of Kern 2700 M Street, Suite 100 Bakersfield, CA 93301

Email: loreleio@kerncounty.com

Kathleen Krause, Clerk of the Board Board of Supervisors County of Kern 1115 Truxtun Avenue, 5th floor Bakersfield, CA 93301

Email: clerkofboard@kerncounty.com

Via Email Only

Craig Murphy, Assistant Director **Email:** murphyc@kerncounty.com

Janice Mayes, Planner III

Email: mayesj@kerncounty.com

Re: Request for Mailed Notice of Actions and Public Hearings - Bullhead Solar Project (CUP Nos. 48, 49, 50, 121 and 122)

Dear Ms. Oviatt, Ms. Bedard, Mr. Murphy and Ms. Mayes:

We are writing on behalf of California Unions for Reliable Energy ("CURE") to request mailed notice of the availability of any environmental review document, prepared pursuant to the California Environmental Quality Act, related to the Bullhead Solar Project, CUP Nos. 48, 49, 50, 121 and 122, ("Project") proposed by EDF Renewables, LLC ("Applicant"), as well as a copy of the environmental review document when it is made available for public review.

We also request mailed notice of any and all hearings and/or actions related to the Project. These requests are made pursuant to Public Resources Code Sections 21092.2, 21080.4, 21083.9, 21092, 21108, 21152 and 21167(f), and Government Code Section 65092, which require local agencies to mail such notices to any person who has filed a written request for them with the clerk of the agency's governing body.

6407-001acp

The Project involves the construction and operation of a solar facility and associated infrastructure, including telecommunications towers and internal roads, to generate up to 270 megawatts (MW) of renewable electrical energy with a Battery Energy Storage System capable of storing approximately 270 MW, or 1,080 megawatt-hours (MWh) of energy. The project is located within approximately 25 acres of the 1,343.2 acre project site on Staddling Dawn Road between 105th Street West and 75th Street West in Rosamond, California.

CURE is an unincorporated association of individuals and labor organizations that may be adversely affected by the potential impacts associated with Project development. CURE has a strong interest in enforcing the State's environmental laws that encourage sustainable development and ensure a safe working environment for its members.

Please use the following contact information for all correspondence regarding this request:

Sienna Shankel Adams Broadwell Joseph & Cardozo 601 Gateway Boulevard, Ste. 1000 South San Francisco, CA 94080

Email: sshankel@adamsbroadwell.com

Phone: (650) 589-1660

Thank you for your assistance with this matter.

Sincerely,

Sienna Shankel Legal Assistant

AATRO

SLS:acp



California Program Office

P.O. Box 401 Folsom, California 95763 | 916-313-5800 www.defenders.org

December 21, 2022

Janice Mayes, Planner III
Kern County Planning and Natural Resources Department
2700 M Street, Suite 100
Bakersfield, CA 93301

Delivered via email to: mayesj@kerncounty.com

RE: Scoping Comments for Bullhead Solar Project by EDF Renewables, LLC

(SCH 2022110504)

Dear Ms. Mayes,

Thank you for the opportunity to provide scoping comments in response to the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the proposed Bullhead Solar Project by EDF Renewables, LLC (Project). Defenders of Wildlife (Defenders) has nearly 2.2 million members and supporters in the United States, 323,000 of which reside in California.

Defenders is dedicated to protecting all wild animals and plants in their natural communities. To that end, Defenders employs science, public education and participation, media, legislative advocacy, litigation, and proactive on-the-ground solutions to prevent the extinction of species, associated loss of biological diversity, and habitat alteration and destruction. Defenders strongly supports energy development that will help meet California's emission reduction goals and avoids destruction of important wildlife habitat and loss of at-risk species. A low-carbon energy future is critical for California – for our economy, our communities, and the environment. Achieving this future—and *how* we achieve it—is critical for protecting California's internationally treasured wildlife, landscapes, productive farmlands and diverse habitats.

As we transition toward a clean energy future, it is imperative for our future and the future of our wild places and wildlife that while addressing the long-term impacts of climate change, we also consider the near-term impact of solar development on our biological diversity, fish and wildlife habitat, and natural landscapes. We need smart planning for renewable power that avoids and minimizes adverse impacts on wildlife and lands with known high-resource values.

Energy projects must be sited, developed and operated to avoid, minimize and mitigate adverse impacts to wildlife and their habitat.

Project Description

The proposed Project is a photovoltaic solar facility with associated infrastructure that would generate up to 270 MW of renewable energy and provide storage for up to approximately 270 MW, or 1,080 MWh, utilizing a battery energy storage system. The Project is located on 1,342 acres of privately-owned land within the Antelope Valley in unincorporated Kern County. It is approximately 8 miles northwest of the community of Rosamond, and 2 miles north of the community of Willow Springs. The Project is adjacent and will connect to the existing Big Beau solar project via a private road and will utilize the same interconnection infrastructure.

Twenty-nine percent of the Project site is Farmland of Statewide Importance, with the remainder of the site being Grazing Lands (9%) or nonagricultural natural vegetation or vacant and disturbed lands. Additionally, 62% of the Project site is within the Kern County Agricultural Preserve; however, the land is currently fallow. The agricultural preserve is a prerequisite to placement under a Williamson Act contract however no parcels within the site are under Williamson Act contracts that would be affected by the removal from the preserve. The Project site may provide habitat to numerous special status wildlife species, including but not limited to the following:

Common Name	Scientific Name	Status
American badger	Taxidea taxus	State Species of Special
		Concern
Burrowing owl Athene cu	Athene cunicularia	State Species of Special
	Athene cumcularia	Concern
Desert tortoise	Gopherus agassizii	Federally and State
		Threatened
Loggerhead shrike	Lanius ludovicianus	State Species of Special
		Concern
Mohave ground squirrel	Xerospermophilus mohavensis	State Threatened
Swainson's hawk	Buteo swainsoni	State Threatened
Western Joshua tree	Yucca brevifolia	State Candidate Threatened

The Project site provides importance nesting and foraging habitat for Swainson's hawk. Cumulative impacts from extensive renewable energy development along with historic loss of habitat due to conversion for housing, agriculture and other uses within the Antelope Valley has profoundly contributed to the decline of Swainson's hawk breeding pairs in the region.

Comments

We offer the following comments on the scope of the DEIR for the Project:

1. Project Site Location

The population for Swainson's hawk located in the Antelope Valley has experienced a significant decrease in habitat to solar energy development within the region. This extensive development has exacerbated the larger historic decrease in this population locally and statewide due to land conversion and habitat fragmentation. This additional decrease in habitat due to solar development has proven to be detrimental to the survival of the region's population and we are already witnessing the impacts. In 2021, 14 nesting pairs were observed within the Antelope Valley population of the species and only five young were produced. Permanent nest territory abandonment, likely due to increasing solar energy development, is also impacting the survival of the population.

Looking at the specific location of the Project within the Antelope Valley highlights the low-population numbers for Swainson's hawk even further. According to *Conservation Strategy for Swainson's Hawk in the Antelope Valley of the Mojave Desert, California (See* Attachment 1), the current extent of renewable development proposed within the Antelope Valley west of SR 14 has a high likelihood of eliminating all documented Swainson's Hawk nesting territories on the West side of the Valley.³ The Project is located west of SR 14 and would further exacerbate the decline and potential extirpation of the species within the area.

The home range for the species within the Antelope Valley can have a radius of 1 to 5 miles and a Swainson's hawk nest is considered active if it was used at least once within the last 5 years. ⁴ Therefore, any development within a 5-mile radius of a Swainson's hawk nest that was active within the previous 5 years would also result in a detrimental impact to the population and would not be a suitable alternative location for consideration. It is our understanding that active nests are located on or near the Project site and active foraging is occurring within a 5-mile radius of the site. Defenders recommends robust alternatives analysis in the DEIR that prioritizes

¹ Bloom Biological, Inc. 2022. Conservation Strategy for Swainson's Hawk in the Antelope Valley of the Mojave Desert, California. P. 3.

² Bloom Biological, Inc. 2022. *Conservation Strategy for Swainson's Hawk in the Antelope Valley of the Mojave Desert, California*. P. 18.

³ Bloom Biological, Inc. 2022. *Conservation Strategy for Swainson's Hawk in the Antelope Valley of the Mojave Desert, California*. P. 18.

⁴ California Energy Commission and Department of Fish and Game. 2010. Swainson's Hawk Survey Protocols, Impact Avoidance, and Minimization Measures for Renewable Projects in the Antelope Valley for Los Angeles and Kern Counties, California.

alternative Project sites on lands that do not provide critically important nesting or foraging habitat for Swainson's hawk.

2. Cumulative Impacts

The increasing development of solar energy projects within the Antelope Valley is having a significant impact on biological resources in the region. This Project is not an exception and would significantly add to the loss of the Antelope Valley's important and declining biological resources. Defenders is particularly concerned about the cumulative impact of the threatened Swainson's hawk.

The cumulative impact from renewable projects on Swainson's hawk within the region is already visible; foraging habitat was found to be substantially far less in 2021 than was observed during a 1979 statewide Swainson's hawk survey. As a result, there is a high chance of the species' elimination west of SR 14 in the Antelope Valley due to the current extent of renewable energy development occurring. Many of these proposed projects either contain, are immediately adjacent to, or surround existing occupied or active nest trees. As the number of projects increase around nesting trees, the distance between the nests and foraging habitat is likely to increase, which can be expected to lower survivorship of the species. Given the location of this Project in the western portion of the region and the fact that it connects to another existing solar project, it is reasonable to expect significant cumulative impacts.

Despite this ongoing renewable energy development, adequate cumulative impacts analysis is consistently absent from EIRs within Kern County. Kern County has failed to provide robust cumulative impacts analysis and therefore failed to prevent negative cumulative impacts. Defenders has stressed the need for robust cumulative analysis within previous comments we submitted for other renewable projects within Kern County, and we once again request the need to analyze fully the direct and indirect cumulative impacts of past, present and reasonably foreseeable activities that will adversely impact biological resources within the Antelope Valley. This analysis must include, but not be limited to, the cumulative impacts on special status species such as burrowing owl, desert tortoise, Joshua tree, Mohave ground squirrel and Swainson's hawk. The analysis must also include the cumulative impacts to wildlife connectivity and provide mitigation measures. Furthermore, Defenders requests the analysis include a detailed map of existing and planned solar energy development with the remaining nesting and foraging habitat for Swainson's hawk.

⁵ Bloom Biological, Inc. 2022. *Conservation Strategy for Swainson's Hawk in the Antelope Valley of the Mojave Desert, California*. P. 21.

⁶ Bloom Biological, Inc. 2022. *Conservation Strategy for Swainson's Hawk in the Antelope Valley of the Mojave Desert, California*. P. 18.

3. Conduct Protocol Level Surveys

Defenders recommends coordination with the California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service for appropriate protocol level survey methods for special-status species. If the surveys find special-status species occurring on or near the project site, we recommend consultation with the state and federal wildlife agencies for recommended impact avoidance, minimization and mitigation measures including compensatory mitigation, and requirements for obtaining Incidental Take Permits, if needed.

a) Burrowing Owl

The Project site may provide habitat for the burrowing owl, and according to the DEIR for the connected Big Beau Solar Project, burrowing owls were observed near the Project site during 2018 protocol surveys. Burrowing owls are listed as a Species of Special Concern by CDFW and it is estimated that there are fewer than 10,000 breeding pairs of burrowing owls in the state and most exist on privately owned land. The surveys must follow the *State of California's Staff Report on Burrowing Owl Mitigation recommendations*. If burrowing owls are observed on or adjacent to the Project site based on the survey, the DEIR must, at a minimum, include avoidance, minimization and mitigation measures for the species based on those listed within the recommendations.

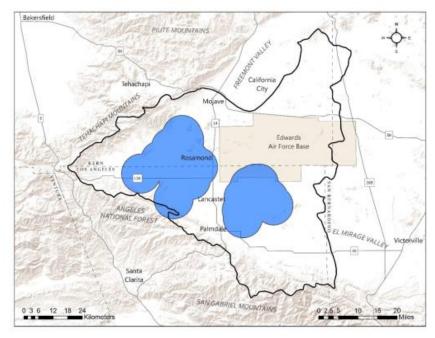
b) Swainson's Hawk Surveys

The Project site contains habitat for Swainson's hawk, and as depicted by the map below, is within a five-mile buffer radius surrounding Swainson's hawk territory.

⁷ BigBeau Solar, LLC/EDF Renewables Development, Inc. 2020. Draft Environmental Impact Report SCH# 2019071059, Volume 1 Chapters 1 through 10. P. 4.4-23.

⁸ California Department of Fish and Wildlife. 2012. *Staff report on burrowing owl mitigation*. The 7 March 2012 memo replacing 1995 staff report, State of California Natural resources Agency, Department of Fish and Wildlife. Sacramento, California.

⁹ California Department of Fish and Wildlife. 2012. *Staff report on burrowing owl mitigation*. The 7 March 2012 memo replacing 1995 staff report, State of California Natural resources Agency, Department of Fish and Wildlife. Sacramento, California.



10

Defenders recommends that a survey for the species be conducted that, at a minimum, conforms to CDFW and the California Energy Commission's survey guidelines within Swainson's Hawk Survey Protocols, Impact Avoidance, Minimization Measures for Renewable Energy Projects in the Antelope Valley of Los Angeles and Kern Counties, California. 11 If the species is observed on or adjacent to the Project site based on the survey, the DEIR must include avoidance, minimization and mitigation measures developed in consultation with CDFW.

If Swainson's hawks or potential Swainson's hawk nests are discovered on near the project site, mitigation must include providing Habitat Management (HM) lands as recommended within the guidelines. These HM lands must further adhere to the latest recommended ratio of, at a minimum, 2:1 for habitat impacted within a five-mile radius of nest active within the previous 5 years. Furthermore, the recommended ratio for compensatory mitigation

¹⁰ Bloom Biological, Inc. 2022. *Conservation Strategy for Swainson's Hawk in the Antelope Valley of the Mojave Desert, California*. P. 23

¹¹ California Energy Commission and Department of Fish and Game. 2010. Swainson's Hawk Survey Protocols, Impact Avoidance, and Minimization Measures for Renewable Projects in the Antelope Valley for Los Angeles and Kern Counties, California.

¹² California Energy Commission and Department of Fish and Game. 2010. Swainson's Hawk Survey Protocols, Impact Avoidance, and Minimization Measures for Renewable Projects in the Antelope Valley for Los Angeles and Kern Counties, California.

HM lands for the loss of nesting territories must be acquired at a minimum of 3:1 and those lands managed in perpetuity by a qualified conservation organization as defined by CA Civil Code Section 815.3.¹³

Finally, Swainson's hawk is a state-listed species under the California Endangered Species Act which means the Project must obtain an Incidental Take Permit (ITP) from CDFW for activities that can result in take. If Swainson's hawk or potential nests are observed during protocol-level surveys, the Project will be required to obtain an ITP. Given the Project site is within nesting and foraging habitat for the species, it is reasonably foreseeable that the Project will result in incidental take.

c) Western Joshua tree

The Project site and surrounding area are known to contain Western Joshua trees (Joshua tree), as stated within the NOP. Joshua tree is a state candidate species and is therefore protected under the California Endangered Species Act. Defenders recommends that a survey for rare plants and Joshua tree be conducted that, at a minimum, conforms to CDFW guidelines outlined in *Protocols for Surveying and Evaluating impacts to Special Status Native Plant Populations and Sensitive Natural Communities*. ¹⁴ If there is any observance of the species, Defenders recommends a 290-foot no-disturbance buffer to avoid impacts to individual trees and to the seed bank. This buffer distance is consistent with CDFW recommendations on similar solar projects, such as the Raceway 2.0 Solar Project. ¹⁵

Defenders recommends coordination with CDFW on take of Joshua Tree. The Fish and Game Commission released an emergency rule that allowed for take of Joshua tree during the Candidacy period for certain solar energy development projects in Kern and San Bernardino counties. This Project however was not included in the list of 16 solar projects for take. Therefore, the Project must obtain an ITP for any activities that may result in take of

¹³ Bloom Biological, Inc. 2022. *Conservation Strategy for Swainson's Hawk in the Antelope Valley of the Mojave Desert, California*. P. 22.

¹⁴ California Department of Fish and Wildlife. 2018. *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities*.

¹⁵ California Department of Fish and Wildlife. 2019. Raceway 2.0 Solar, by sPower Development Corporation, LLC (Project) Draft Environmental Impact Report (DEIR) SCH No.: 2020079007.

Joshua tree. Furthermore, Defenders recommends consultation with CDFW on possible funding for the Joshua tree mitigation account.

Conclusion

Thank you once again for the opportunity to provide scoping comments for the Bullhead Solar Project DEIR and for considering our comments. The Project will impact over 1,300 acres of habitat within the Antelope Valley, which is experiencing high levels of solar energy development. We strongly urge the developer and the County to seek avoidance measures, provide adequate mitigation measures as required, and conduct a robust cumulative impacts analysis.

We look forward to reviewing the DEIR and request to be notified when it is available. If you have any questions, please contact me at 408-603-4694 or via email at smarkowska@defenders.org.

Respectfully submitted,

Serphin Markensker

Sophia Markowska

Senior California Representative

Attachment 1

Conservation Strategy for Swainson's Hawk in the Antelope Valley of the Mojave Desert, California



Conservation Strategy for Swainson's Hawk in the Antelope Valley of the Mojave Desert, California



Prepared by:

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ABOUT BLOOM BIOLOGICAL, INC,

For more than 45 years, Bloom Biological, Inc. (BBI) has provided biological consulting services for large and small clients. Our resume of services includes raptor and endangered species research, biological monitoring, impact assessment, permitting, conservation planning and geospatial analysis. Our innovative approach has provided solutions to complex problems for clients and projects throughout a range of industries including alternative energy, residential development, US government agencies, and the public sector. Collectively, the management and staff of BBI hold permits or memoranda of understanding for participating in the conservation and recovery of more than a dozen endangered or threatened species, as well as several other special-status species, in California and the western United States. Over the years, BBI has established an impeccable relationship with the resource agencies, project proponents, and environmental organizations by skillfully balancing the needs and objectives of land planning, resource conservation, and the public interest. In addition to our work in California and the western United States, BBI biologists have worked in Alaska, Central and South America, Europe, Southern Asia, and the western Pacific, and have published numerous scientific articles on various environmental and biological issues. BBI is a certified Small Business Enterprise and Woman-owned Business Enterprise.



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1.0 EXECUTIVE SUMMARY

The Conservation Strategy for Swainson's Hawk of the Antelope Valley aims to provide what is known of the status of Swainson's Hawk in this region of California's Mojave Desert, and to address conservation concerns for this population by providing recommended guidelines for how, when, and where to mitigate, conserve, and manage lands in perpetuity such that Swainson's Hawk will remain an integral part of the Antelope Valley ecosystem. This breeding population continues to be adversely impacted by the expansion of renewable energy development, reduction in water availability and subsequent changes to agricultural practices, increasing urbanization, and cumulative effects of climate change in this region of California. Immediate conservation action is necessarily to maintain the presence of Swainson's Hawks in the Antelope Valley. Recommended conservation actions detailed in this Conservation Strategy include (1) Conservation of foraging and nesting habitat, (2) Conservation of nest trees, (3) Management of conservation lands, and (4) Annual assessment of the population.

2.0 INTRODUCTION

Swainson's Hawk (*Buteo swainsoni*) is a large soaring raptor with a wide distribution in California that inhabits the wide-open spaces characterized by deserts and valleys from sea level on the coast and deserts to 7,000 feet (2,000 m) above sea level in the Sierra Nevada Range. Over this broad range the species inhabits a variety of habitats from coastal sage scrub in the southwest to Great Basin Desert plant communities in the northeast. The core population is in the Central Valley. Outside of the Central Valley the current range is patchily distributed across several medium to large valleys from Siskiyou County in the north to the Antelope Valley of Los Angeles and Kern counties in the south. The historic range south of the Antelope Valley to the Mexican border remains largely extirpated. The species was listed as state threatened in 1983 after a 1979 study revealed a 91% decline from historic levels, due in part to habitat loss (Bloom 1980). The Antelope Valley currently contains the southern-most nesting population in California and as with the Central Valley population (Battistone et al. 2019) has been increasing.

The Antelope Valley nesting population has been monitored opportunistically and increased from one known territory in 1979 to 14 territories in 2021 (Bloom in prep.). Recent population increases in the Antelope Valley Swainson's Hawk population are now threatened with loss of nesting and foraging habitat due to several causes including the conversion of native desert and farmland to solar farms, reduction in water availability from a recent water adjudication causing a loss of trees and alfalfa cultivation preferred by the hawk, urban expansion, and climate change. This strategy seeks to address conservation concerns by providing the how, when, and where to mitigate, conserve, and manage lands in perpetuity in the Antelope Valley such that Swainson's Hawk will remain an integral part of the Antelope Valley ecosystem. The area targeted by this strategy includes approximately 1.6 million acres (650,000 hectares) of the western most extent of the Mojave Desert within Kern, Los Angeles, and San Bernardino Counties collectively referred to as the Antelope Valley (Figure 1).



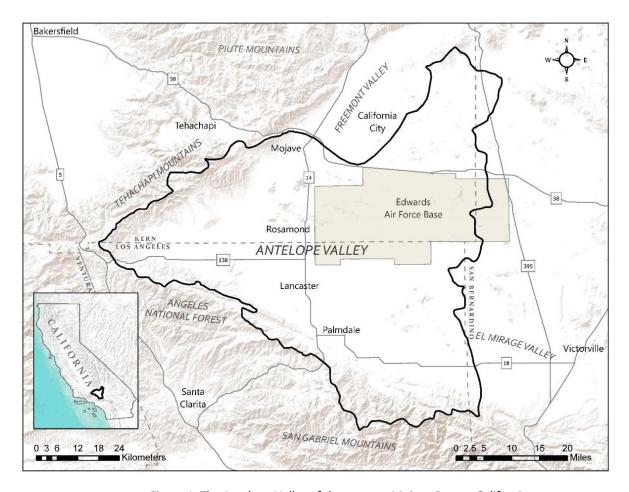


Figure 1. The Antelope Valley of the western Mojave Desert, California.

3.0 SUMMARY OF SWAINSON'S HAWK NATURAL HISTORY

3.1 Population Status

3.1.1 Population Status in California

The California Department of Fish and Game and the Bureau of Land Management funded the California statewide Swainson's Hawk survey in 1979. The goal was to examine all California counties where Swainson's Hawk nesting habitat was available as determined by review of historic records as well as conducting field surveys in appropriate habitat. Results of the 1979 survey revealed an estimated 91% statewide decline in breeding Swainson's Hawks, down from an estimated 17,000 pairs to 375 pairs (Bloom 1980). What appeared to be the core population was observed in the Central Valley (Bloom 1980) and remains so (Battistone et al. 2019). Except for one pair in the Antelope Valley and one pair near Cima, in what is now the Mojave National Preserve, the hawk had been extirpated from south of the southern Kern County line to the Mexican border, as well as from several counties surrounding the Central Valley. The species numbers and breeding distribution had been greatly reduced to the north and east in the Great Basin and Mojave Deserts. Missing were thousands of pairs of what was a ubiquitous large raptor, roughly the size of a Red-tailed Hawk (*B. jamaicensis*). Small populations remained in Siskiyou, Lassen, and Modoc Counites of the Klamath Basin and in the vicinity of the Modoc Plateau. A robust breeding population largely dependent on alfalfa now exists in the in the Butte Valley of the Klamath Basin (Woodbridge 1991, Briggs et al. 2011),



although changes in crop types may portend declines (Briggs et al. 2011). The cause of the statewide population decline is poorly understood (Risebrough et al. 1989), but the loss and severe degradation of foraging and nesting habitat is known to have played a significant role, particularly in southern California where such habitats were severely depleted (Bloom 1980).

Since completion of the original 1979 surveys, Swainson's Hawk populations have seemingly been on the rebound in California except for the southern third of the state where slight increases have been observed near Gorman, Caliente, and Arvin in Kern County, and Seal Beach in Orange County (Bloom unpubl.), with a pronounced increase in the Central Valley population where surveys in 2005 and 2006 revealed an estimate of 3,218 pairs (Battistone et al. 2019) and 14 pairs in the Antelope Valley in 2021 (Bloom in prep.). Other Swainson's Hawk breeding populations to the east in the Owens Valley and Chalfant Valley (Bloom unpubl.), and to the north in the Honey Lake Valley and Surprise Valley (Bloom unpubl.) and in the Butte Valley of the Klamath Basin have also increased (Briggs et al. 2011). With the exception of the western Mojave Desert, surveys of Joshua tree (*Yucca brevifolia*) habitat across the majority of the Mojave have revealed no new nest territories since 1979 but revealed numerous Redtailed Hawk, Great Horned Owl (*Bubo virginianus*), and Common Raven (*Corvus corax*) nests in Joshua trees (Bloom unpubl.).

3.1.2 Population Status in the Antelope Valley

Only one Swainson's Hawk nest was found in the Antelope Valley in 1978 and 1979, located to the east of California State Route 14 (SR 14) (Garrett pers. Comm, Bloom 1980) and none in 1980 (Bloom unpubl.). While several Swainson's Hawk pairs and their nests were identified in 1997, no robust surveys were undertaken in the Antelope Valley until 2005, 2006, 2016, 2018, 2020, and 2021 when between 4 to 14 pairs produced a minimum of 1 to 19 young (Bloom unpubl.). The number of breeding pairs peaked in 2021 with 14 pairs observed, but productivity was abysmal with only 5 young produced. There are several possible reasons for the limited growth of the breeding population and low success rate observed in 2021. All have cumulative and compounding effects including: 1) the completion of the Tehachapi Renewable Transmission Project (TRTP) high-voltage electric transmission line in 2016 leading to the accelerated expansion of renewable energy development throughout the western Antelope Valley; 2) changes in and reduction of agricultural practices as a result of the Antelope Valley Groundwater Adjudication in 2015; 3) increasing urbanization and human related disturbance; and 4) climate change. Currently, the adult population appears stable, but the limited number of young produced in recent years coupled with extirpated territories suggests a future decline. Habitat loss, fragmentation, and degradation (Bowers and Matter 1997, Debinski and Holt 2000, Fahrig 2004) are threatening 40 years of Swainson's Hawk population recovery in the Antelope Valley. Surveys of all known territories coupled with monitoring of the status of adults must be completed annually.

The Antelope Valley can be considered as divided into two areas (east and west) by State Route 14 (SR 14) and the urbanized areas of the cities of Palmdale, Lancaster, Rosamond, and Mojave. The nest observed in 1978 and 1979 was located on the east side of the Antelope Valley, approximately 15 miles (24 km) east of SR 14. Since 1979, Swainson's Hawks on the east side of the Valley have nested to the south near Palmdale, north near the boundary of Edwards Air Force Base, and between the outskirts of Lancaster and near Saddleback Butte State Park (Bloom unpubl.). The first nest observed on the west side of the Antelope Valley (west of SR 14) was documented in 1997 (Bloom unpubl.). Swainson's Hawk nests on the west side of the Valley have been documented to the north near the community of Willow Springs and the Tehachapi foothills, south near the foothills of the San Gabriel Mountains and the Angeles National Forest, west near the community of Neenach, and as far east as 60th St W. Of the 33 Swainson's Hawk nest territories identified between 1979 and 2021, 21 were on the west side and 12 were on the east side of the Antelope Valley (Figure 2). The eastern and northern most areas of the Antelope Valley and Edwards Air Force Base have not been surveyed for nesting Swainson's Hawk, it would be prudent to accomplish this as soon as possible.



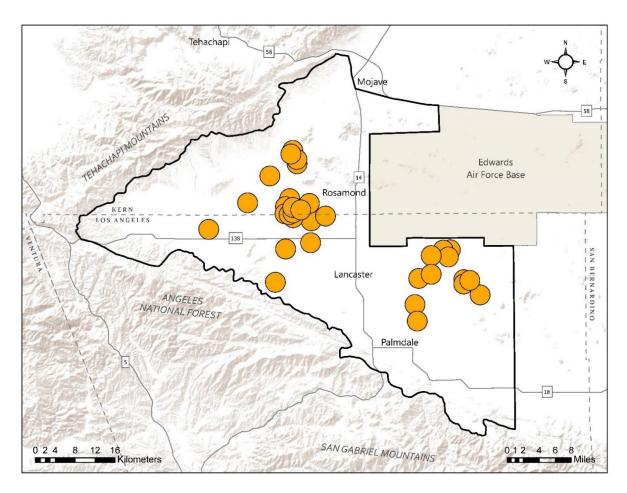


Figure 2. Swainson's Hawk Study Area and Nesting Territories within the Antelope Valley.

Territories are displayed as a 2 km buffered radius around the centralized nest location for protection of the precise nest location. The 2 km buffer is not intended to display home range size.

3.2 Migration

The Swainson's Hawk of California is a long distant migrant (Brown and Amadon 1968, Bechard et al. 2020, Airola et al. 2019) that expends roughly 3.5 months on the fall migration and wintering grounds in South America and 3.5 months during the spring migration returning. Approximately 5 months are spent on the breeding grounds. Foreign band recoveries of hawks banded in California include Mexico, Columbia, Bolivia, and Argentina. Migrant Swainson's Hawks are often observed in large flocks, sometimes capturing dragonflies or grasshopper on the wing. Foraging migrants can be observed over a wide variety of lands and habitats throughout the Antelope Valley that include cattle ranching at the west end, and native desert, fallow alfalfa, active alfalfa, and vacant fields throughout. During migration most any natural habitat provides foraging opportunities, but foraging over water bodies, urban, commercial, nut orchards, row crops, and renewable energy offers limited hunting potential. For demonstrative evidence of the distribution of the species in the Antelope Valley during migration, Ebird provides over 3,052 individuals sighted from 1978 to 2021 between the months of March through April and September through October, with three instances of more than 100 birds recorded during single observations (Figure 3; Ebird Basic Dataset 2021). Habitat use of post-nesting season and pre-nesting season birds is unstudied.



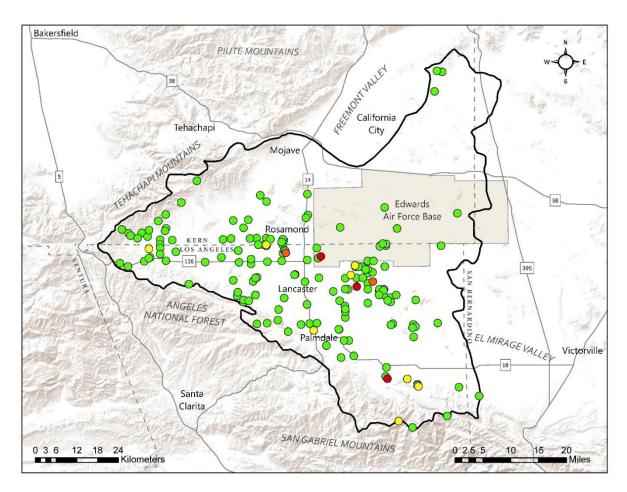


Figure 3. Swainson's Hawk migratory records in the Antelope Valley as reported to Ebird.

Color indicates quantity of Swainson's Hawks observed per single observation record as follows:

Green = 1-25, Yellow = 26-50, Orange = 51-100, Red >100 (Ebird Basic Dataset 2021).

3.3 Natal Dispersal

Natal dispersal is the movement of young organisms from their birthplace to where they breed or attempt to breed (Howard 1960, Murray 1967). As inbreeding is generally regarded as detrimental, it is expected that most organisms would disperse as far away from relatives as possible to reduce the potential for close inbreeding. However, a substantial number of species studied (Shields 1982) tend to be relatively short distance dispersers. Studies of natal dispersal distance among 4 members of the genus Buteo [Swainson's Hawk, Red-tailed Hawk, Redshouldered Hawk (B. lineatus), Galapagos Hawk (B. galapagoensis)] (Woodbridge et al. 1995, Bloom 2011, Dykstra 2019, Bollmer et al. 2005), all to varying degrees display philopatry and elect to move short median distances between birth and breeding locations. A decade long Antelope Valley dispersal study is nearing completion [Bloom Research, Inc. (BRI) in prep.]. All known Swainson's Hawks banded as nestlings in the Antelope Valley currently breed in the Antelope Valley (BRI in prep.). Banded Antelope Valley young monitored to date traveled short distances from their location of birth to their breeding location (~15 km) with a small percentage of Great Basin natal dispersal occurring at medium to long distances (BRI in prep.). Swainson's Hawk are a long-lived (25 year) species. As a result, short natal dispersal distances between related individuals or pairs have the potential to lead to some level of inbreeding, strengthening of philopatric tendencies, and genetic structuring in this population. When populations become either geographically or ecologically (philopatric) isolated they can become insular, essentially islands with little or no gene exchange (Quammen 1996).



3.4 Breeding Dispersal

Breeding dispersal is the movement of adult organisms that have reproduced and moved to subsequent breeding locations and is shorter than natal dispersal (Greenwood 1980). Frequently, Swainson's Hawks tend to pair and retain the same territory for life that they first breed in, exhibiting high breeding territory fidelity. This means that adult parents and their matured young that tend to nest near their natal territory will likely nest in the Antelope Valley for the duration of their lives. As a result, all Antelope Valley banded adults monitored to date traveled short distances from their first known breeding location to subsequent breeding locations (~5 km) and all marked birds that we are aware of breed in the Antelope Valley (BRI in prep.). However, it is impossible to know how many marked birds may have emigrated out of the Antelope Valley that have not been resighted and/or reported. Thus, recruitment of new adults into the breeding population will most frequently be from progeny of local adults within the Antelope Valley and if the number of annually active breeding territories and fledglings decrease, recruitment into the local population will be limited. If significant conservation measures are not rapidly employed, complete extirpation of the Antelope Valley Swainson's Hawk breeding population may be imminent even while other California populations continue to increase.

In 1979 when the first Antelope Valley Swainson's Hawk survey was conducted, only one Swainson's Hawk pair was known to exist in the Antelope Valley (Bloom 1980). Populations comprised of a small number of individuals can lead to issues associated with founder effects if the progeny of the first (or the last) breeding pair produce young that breed with each other and/or their parents. A tendency toward short dispersal distances both for the adult Swainson's Hawks between nesting territories (breeding dispersal) and young first-time breeders (natal dispersal) can enforce the trend toward philopatry and ultimately genetic structuring between adjacent breeding populations. Immigration from outside of the Antelope Valley breeding population would diffuse genetic structuring by adding diversity to the gene pool. However, no adult Swainson's Hawks with known origins outside of the Antelope Valley have been observed to breed within the Antelope Valley. Additionally, no Antelope Valley progeny have been observed to breed in areas other than within the Antelope Valley. Several young and one adult Swainson's Hawks equipped with GSM/GPS transmitters in the summer of 2021 may shed some additional light on how far young Antelope Valley hatched birds might disperse, but not until they reach breeding age in their third calendar year of life (2023). How far adult breeding birds may move between subsequent nesting locations may be known as early as spring of 2022.

3.5 Genetic Relatedness

Due to the high level of nest territory fidelity in both returning progeny and adult breeding Swainson's Hawks, the small Antelope Valley population may have become ecologically isolated due to the dominance of philopatry represented in the birds recaptured or resighted. The degree of relatedness in this currently small and relatively isolated population is unknown but expected to be high. During nest visits, no physical genetic abnormalities have been observed in the young suggesting some gene flow from outside of the Antelope Valley. However, poor population level reproductive success observed in at least 2 years of the last 10 could be indicative of unseen genetic issues. The presumably high relatedness due to limited natal dispersal will likely ensure strong fidelity of breeding adults and their progeny to the Antelope Valley. One-hundred seventy-six genetic samples collected from Swainson's Hawk throughout the Antelope Valley and much of California await analysis to better understand gene flow into the Antelope Valley and the relatedness of individuals in this small population. From a conservation biology perspective, analyses of these data are critical as this will provide an indication of the frequency of immigration into the Antelope Valley, relatedness of individuals to each other, and whether human intervention by swapping of chicks from other more distant populations might be prudent. If indeed the population is shrinking due to habitat and nesting territory loss, inbreeding of parents and their young, or siblings with siblings could become the norm. It would be prudent to measure the present level of relatedness as soon as possible to compare with a potential smaller population.



3.6 Foraging

During the breeding season Swainson's Hawks in the Antelope Valley feed primarily on vertebrates (Bloom unpubl.). Where studied in California (Bloom 1980, Estep 1989, Sernka 1999, Woodbridge 1991, Cahill 2014, Fleishman et. al. 2016, Babcock 1995, Bechard et al. 2010, Briggs et al. 2011) and in the western United States (Bechard 1982), they show a strong preference for foraging in active alfalfa fields, which can affect local nest distribution (Woodbridge 1991). In the Central Valley, Fleishman et al. (2016) reported adults traveling 8-10 km throughout the breeding season and Babcock reported a similar observation (Bloom pers. com.) of an adult moving 18 km to a flooded alfalfa field in the Sacramento Valley. While no Swainson's Hawk habitat-use studies have been conducted in the Antelope Valley, this effect of prey type and availability in alfalfa fields on Swainson's Hawks is largely true wherever the species space and habitat use has been studied with transmitters. However, such a study was initiated in the Antelope Valley in July of 2021 (BRI unpubl.) and as predicted, all 4 birds (3 young, 1 adult) equipped with transmitters have demonstrated an initial affinity for agriculture, specifically alfalfa, and in the case of the adult, adjacent native desert vegetation.

Native desert habitats adjacent to agriculture offer Swainson's Hawks pairs more opportunities in terms of nesting and foraging habitats and prey species diversity. In the Antelope Valley, the remaining native desert consists primarily of widely dispersed Joshua tree, Joshua tree woodland, creosote bush (Larrea tridentata), saltbush (Atriplex spp.), rabbitbrush (Ericameria nauseosa), white bursage (Ambrosia dumosa), spiny hop sage (Grayia spinosa), California juniper (Juniperus californica), California buckwheat (Eriogonum fasciculatum), greasewood (Sarcobatus vermiculatus), and shadscale (Atriplex spp.). These habitats can be expected to be utilized in varying degrees, the proportions of which we are starting to understand based on preliminary telemetry data. Based upon spring season food habits studies from the Antelope Valley, the presence of desert horned lizard (Phrynosoma platyrhinos), western whiptail (Aspidoscelis tigris), Merriam's kangaroo rat (Dipodomys merriami), and snake remains found at nest sites (Bloom unpubl.), strongly suggest foraging in native desert habitats. Joshua trees are used both as strategic hunting perches as well as nest trees in the Mojave Desert. In the case of the Antelope Valley, most Swainson's Hawk nest territories involve nest trees immediately adjacent to or near active alfalfa. However, three known nest territories contain nests in Joshua trees, with the surrounding habitat dominated by native desert and no apparent alfalfa cultivation nearby. It is suspected the Swainson's Hawk likely nested predominantly in Joshua tree in the Antelope Valley based on evidence of more widespread Joshua tree distribution throughout this region prior to widescale removal of native desert for agriculture and urban development (Cole et al 2011, Leadabrand 1966). Modern evidence of historic Joshua tree distribution is apparent in the locations of remaining woodland and observation of agricultural relics (concrete irrigation stands, pipes, swales, pond basins) within and adjacent to the remaining Joshua tree habitat.

There are ongoing quantitative and robust space and habitat use studies of Swainson's Hawk in the Antelope Valley of the Mojave Desert (BRI unpubl.). What can currently be surmised is that Joshua tree woodland in the west Mojave Desert provides not only numerous potential nest structures for Swainson's Hawk and other avian species, but due to their height, also provide significant hunting perches. Within the woodland, the combined habitats of both live trees and downed snags likely promote a wider array of vertebrate prey species than any other native Mojave Desert habitat for hawks and owls. Joshua trees support a greater abundance and diversity of nesting birds because of their large size and the protection provided by their spines, and shade from the sun. The trunks are often large enough to support the excavation of cavities by woodpeckers and secondary use by other cavity nesting bird species. While Botta's pocket gophers (*Thomomys bottae*), California voles (*Microtus californicus*), and California ground squirrels (*Otospermophilus beecheyi*) dominate the prey base of Swainson's Hawks foraging in agriculture fields (mostly alfalfa), natural desert habitats provide a greater diversity of nocturnal rodents (kangaroo rats, woodrats, pocket mice, white-footed mice), and diurnal lizards, snakes, small birds, and arthropods. While no evidence of white-tailed antelope ground squirrel (*Ammospermophilus leucurus*) predation has been observed, it is highly suspected that Swainson's Hawk prey on this species within the native desert of the Antelope Valley.



Several studies have documented Swainson's Hawk affinity for foraging in ruderal and fallow agricultural fields (Babcock 1995, Estep 1989, Woodbridge 1991) which may provide moderate prey availability. This suggests that depending upon habitat structure, the plant species composition, amount and proportions, some disturbed habitats may retain some foraging value to the species and can support numerous kangaroo rats, gophers, and other vertebrates, amongst an array of arthropods. Our understanding is that the more recent the conversion from active agriculture to fallow, the less abundant the rodent, reptile, and bird population. Older more mature fallow fields transitioning toward native desert habitats are probably more productive for foraging. Fields are generally hunted from the air by both local breeders as well as spring migrants.

Based upon lack of use by diurnal raptors, nut orchards (almond or pistachio) in the Antelope Valley are apparently biologically less productive than alfalfa and native desert, presumably due to limited prey abundance (mostly small birds), and reduced diversity (essentially no rodents or reptiles). Terrestrial prey availability is near zero due to the overhead cover provided by the canopy. Similarly, row crops such as onions and carrots provide essentially no value to foraging Swainson's Hawks in part due to frequent flood irrigation and hence limited or no use by rodents or reptiles.

No Swainson's Hawk are known to nest within urban, dense residential, or commercial areas of the Antelope Valley. However, they are known to nest in trees adjacent to abandoned residences and have been documented nesting near an occupied residence on one occasion (Bloom unpubl.).

Home range size is an important factor when considering foraging habitat use for Swainson's Hawks. Home ranges of Swainson's Hawk nesting in California span from 170 to 9,978 acres (69 to 4,038 hectares) in agriculturally dominated habitats (Estep 1989, Sernka 1999, Babcock 1995, Woodbridge 1991). The disparity in acreages across different study areas is largely due to the abundance of dominant prey species, the size of the prey species and the distribution of habitats that the prey species is found in. The dominant prey species documented in Woodbridge 1991 is the Belding's ground squirrel (*Spermophilus beldingi*), a medium size colonial squirrel living at high densities in alfalfa and wet meadows/pastures. No habitat or space use studies for Swainson's Hawk have been done in the Mojave Desert of California.

3.7 Nesting Habitat

Presence of and proximity to foraging habitat, particularly alfalfa and native desert habitats, appear to be important predictors of where the species elects to build their nests. Briggs et al. (2011) found that in northern California distance to agriculture was negatively correlated with apparent survival and that the amount of agriculture within a nesting territory was positively correlated with apparent survival. Given that agriculture in the Antelope Valley is decreasing, the distance between nests and foraging habitat may increase for some territories, which in turn may lead to lower survivorship. Similarly, fewer young produced annually could be a result of less available alfalfa acreage.

Swainson's Hawks in California occasionally nest in residential and commercial areas of the Central Valley (particularly Stockton and Sacramento) where appropriate agricultural and/or riparian habitat are nearby but nesting habitat in the form of riparian and oak trees are less abundant (Bloom 1980, Schlorff and Bloom 1984). Based upon 40 years of opportunistic and occasional focused surveys in the Antelope Valley, Swainson's Hawks do not currently nest in residential, urban, or commercial areas, neither do they nest in solar fields, or wind farms (Bloom unpubl.). However, Swainson's Hawks occasionally will nest in Joshua trees between wind and solar fields as well as within agricultural and rural areas, and native desert. While hawks may continue to utilize foraging habitat adjacent to developing areas, the rate at which the development is occurring coupled with the availability of foraging habitat will dictate how long an area remains viable to breeding pairs.

In the Antelope Valley, nesting habitat is dominated by non-native tree species including elms (*Ulmus* spp.), Aleppo pine (*Pinus halepensis*), black locust (*Robinia pseudoacacia*), tamarisk (*Tamarix* spp.), and Arizona cypress



(*Cupresses arizonica*) (Figure 4). California native trees are utilized less frequently in the Valley and include Joshua trees, Fremont cottonwoods (*Populus fremontii*), willows (*Salix* spp.), and California juniper (*Juniperus californica*) (Figure 5). Nest trees are typically located in wind rows or small clusters around dilapidated homesteads, but also include single trees (including Joshua trees) and within Joshua tree woodlands. Most nests in the Antelope Valley are lower than 20 ft (6 m) and range from approximately 12 - 65 ft (4 - 20 m). Wood utility poles are used rarely as nesting substrate by this species and are not known to be used in the Antelope Valley.



Figure 4. Swainson's Hawk nest in the east side of the Antelope Valley adjacent to active alfalfa fields.



Figure 5. Swainson's Hawk nest in the west side of the Antelope Valley in a Joshua tree.



3.8 Predators

The most likely predators of Swainson's Hawk nests in the Antelope Valley include Great Horned Owl, bobcat (*Lynx rufus*), and Common Raven. Ravens opportunistically consume the eggs of nesting Swainson's Hawks when the incubating adult is disturbed and flushed from the nest by people or other disturbance. The expansion and increasing abundance of ravens throughout the western U.S. has had a particularly detrimental impact on California desert species. Ravens thrive off urban sprawl, both feeding on and collecting human trash for nest construction. In addition to predation of the eggs of nesting Swainson's Hawk in the Antelope Valley, ravens occupy many of the available nest trees in the Valley including those previously occupied by Swainson's Hawk. In many instances, ravens occupy stick nests constructed and utilized by Swainson's Hawk in previous years.

4.0 LEGAL BACKGROUND AND PROTECTIONS

4.1 International Protection

4.1.1 Migratory Bird Treaty Act

Essentially all native birds and their nests in the United States are protected. The Migratory Bird Treaty Act (MBTA) of 1918 is a U.S. law that implements the U.S.' commitment to international conventions for the protection of migratory birds as a shared resource. The MBTA was established to end the commercial trade of birds and their feathers, which had decimated the populations of many native bird species by the early 1900's. Under the MBTA, without the appropriate permit it is illegal to, "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by an means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird...for the protection of migratory birds...or any part, nest, or egg of any such bird."

4.2 State Laws & Protections

4.2.1 California Endangered Species Act

The Swainson's Hawk was listed as a Threatened Species under the California Endangered Species Act (CESA) on April 17, 1983. The listing was based on a decreased number of birds as well as habitat loss in much of its range in the state. CESA defines "threatened" as, "a native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter." (Code section 2050-2068). Additionally, "Any animal determined by the commission as "rare" on or before January 1, 1985, is a threatened species". The listing status of Threatened has brought attention and resources to the recovery and conservation of Swainson's Hawk along with prohibiting "take" of the species. "Take" is defined by the California Department of Fish and Wildlife (CDFW) as, "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Projects can apply for an Incidental Take Permit (Section 2081 permit) from CDFW for otherwise legal activities that can result in take.



4.2.2 California Fish and Game Code

The mission of the CDFW is "to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public". California is divided into 7 CDFW jurisdictional regions and the Antelope Valley falls within two of them, Region 4 (Central Region) and Region 5 (South Coast Region).

All birds of prey and their nests are protected under California Fish and Game Code as follows:

- <u>Section 3503</u>: It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.
- <u>Section 3503.5</u>: It is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.
- <u>Section 3513</u>: It is unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Treaty
- <u>Section 3801.6</u>: (a) Except as otherwise provided in this code or regulations made pursuant thereto, it is unlawful to possess the carcass, skin, or parts of any nongame bird. The feathers, carcass, skin, or parts of any nongame bird possessed by any person in violation of any of the provisions of this code shall be seized by the department and delivered to a California Native American tribal government or a scientific or educational institution, used by the department, or destroyed.

Incidental Take Permits (ITPs) allow the permitted individual to take a CESA listed species, such as Swainson's Hawk, if the taking is incidental to, and not the purpose of, carrying out an otherwise lawful activity. The permittee is also required to implement specific minimization and avoidance measures and fully mitigate for the impacts of their project. Prior to issuing an ITP, the applicant must have completed all steps required by the California Environmental Quality Act (CEQA).

4.2.3 California Environmental Quality Act

The California Environmental Quality Act of 1972 assists in the protection of wildlife by requiring local agencies to review, analyze, and mitigate a project's anticipated impacts on biological resources, including impacts to threatened and endangered species, habitats, and wetlands. These impacts can be temporary, permanent, direct, indirect, or cumulative. CEQA provides a mitigation and monitoring pathway for projects with a potential to negatively impact protected species and habitat to reduces the impacts to a less than significant level. All public agencies are required to comply with CEQA before approving a proposed project. Compliance involves the preparation of a negative declaration (ND), mitigated negative declaration (MND), or environmental impact report (EIR). The project's environmental impacts and mitigation measures are included within MNDs and EIRs. CEQA documents are required to be made available to the public and the CEQA process must provide opportunity for public participation.

As Swainson's Hawks are a California Threatened species, impacts to Swainson's Hawks such as loss of nesting or foraging habitat as a result of project development must be disclosed and mitigated for under CEQA. In theory, CEQA is a mechanism for conserving or offsetting the loss of quality Swainson's Hawk habitat in the Antelope Valley with habitat of equal or greater value to the hawk.



4.2.4 CDFW & CEC Swainson's Hawk Guidance

The California Energy Commission (CEC) and CDFW developed a guidance document in 2010 which contains Swainson's Hawk survey protocol, impact avoidance, and minimization measures for renewable energy projects specifically in the Antelope Valley (CEC and CDFW 2010)¹. The survey protocol requires that all potential nest trees within a 5-mile radius of a proposed project site be surveyed for signs of nesting Swainson's Hawk. A standardize survey methodology was developed which includes four survey periods (I, II, III, IV) which span the months of January through July, based around the breeding biology of Swainson's Hawks in this region. Surveys are required to be conducted during at least periods II through IV prior to environmental review and at least during the two survey periods immediately prior to a project's initiation and survey reports must be provided to CDFW.

If active Swainson's Hawk nest(s) are found within the 5-mile radius of the proposed project, a Swainson's Hawk Monitoring and Mitigation Plan should be prepared in consultation with CDFW. A Swainson's Hawk nest is considered active if it was used at least once within the last 5 years. The CEC and CDFW guidance provide guidelines for specific mitigation measure that should be implemented to avoid and minimize impacts to Swainson's Hawks and includes methodology for mitigating for impacts to Swainson's Hawk foraging habitat by providing for habitat management lands within the Antelope Valley breeding range at a minimum 2:1 ratio, to be acquired and managed in perpetuity. Foraging habitat is described as including dry land and irrigated pastures, alfalfa, fallow fields, low-growing row or field crops, new orchards, and cereal grain crops. Additionally, grasslands, Joshua tree woodlands, and other desert scrub habitats that support a suitable prey base are included as Swainson's Hawk foraging habitat. Habitat management lands are preferred if they include suitable Swainson's Hawk nest trees.

While the guidance document recommends mitigation actions within the breeding range of the Antelope Valley Swainson's Hawk population, mitigation does not always occur in close proximity to the impact. There have been instances where impacts to Swainson's Hawk in the Antelope Valley were mitigated for in areas outside of the Valley and outside of the range of the breeding population.

4.2.5 California Desert Protection Act

The California Desert Protection Act (CDPA) of 1994 is a federal law passed by the United States Congress that established the federal lands of Death Valley and Joshua Tree national parks and Mojave National Preserve as well as designated wilderness areas on public land managed by the U.S. Bureau of Land Management (BLM) in the California desert. The CDPA protects these three ecologically and geologically unique desert ecosystems containing approximately 11.4 million acres (4.6 million hectares) of wilderness area (Feldman 1992). Swainson's Hawks are regularly observed migrating and foraging on these federal lands protected by the CDPA. The last report of Swainson's Hawk nesting on these federal lands was 1979 in what is now the Mojave National Preserve.

4.3 Local Protection

4.3.1 Los Angeles County Significant Ecological Areas

Los Angeles County Significant Ecological Areas (SEA) are areas officially designated by the County as having irreplaceable biological resources. SEAs are regulated in order to allow limited and controlled development that does not degrade the unique biodiversity of the region. While SEA designation does not change how an area is zoned, a conditional use permit and review process may preclude development in these areas. The SEA Technical Advisory Committee (SEATAC), comprised of a group of LA County approved biologists, is responsible for reviewing permit

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¹ CDFW & CEC. 2010. Swainson's Hawk Survey Protocols, Impact Avoidance, and Minimization Measures for Renewable Energy Projects in the Antelope Valley of Los Angeles and Kern Counties, California. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83991

applications and the impact of the proposed development on biotic resources. Additionally, SEATAC may recommend that development not occur in sensitive areas or that a project may be design or conditioned in a manner to avoid or minimize the impacts to sensitive areas.

There are three SEAs within the Antelope Valley consisting of approximately 265,000 acres (107,000 hectares) (County of Los Angeles 2021). The two SEAs found on the west side of the Antelope Valley contain many old-growth stands of Joshua trees as well several other diverse natural communities and wildlife corridors. The SEA found in the central region of the Antelope Valley contains the dry lakes and plains found within Edwards Air Force Base and some agricultural cropland to the northeast.

4.3.2 Bureau of Land Management

The Bureau of Land Management, an agency of the U.S. Department of Interior, is tasked with the administration of programs for conservation and development of all public lands and resources in the United States managing more land than all other U.S. government agencies combined. The lands managed by the BLM are collectively called public lands and are managed following the BLM's principles of multiple use which include wildlife habitat, timber harvesting, livestock grazing, recreation, and oil, gas, and mineral extraction among others. BLM manages public land for wildlife habitat by maintaining and improving habitat, managing habitat for threatened and endangered species, and mitigating the effects of other multiple use activities on wildlife and their habitats. Protected public lands are termed National Conservation lands which are comprised of wilderness, wilderness study areas, wild and scenic rivers, national conservation areas, national monuments, and national historic trails.

In addition to managing land uses in compliance with the ESA, the BLM State Directors designate Sensitive Species occurring on public lands. BLM manages Sensitive Species and their habitats in a way which will minimize or eliminate threats or improve the species' habitat condition (BLM 2008). Swainson's Hawks are a BLM Sensitive Species in California.

Public land provides immense value to both nesting and migrating raptors with areas managed specifically for birds of prey. One such area is the Morley Nelson Snake River Birds of Prey National Conservation Area in Idaho, which has one of the densest populations of nesting raptors with a total of 211 occupied nesting territories of 11 species of raptors in 1975 (Olendorff and Kochert 1975).

Within the Antelope Valley there are approximately 62,300 acres (25,200 hectares) of BLM managed public lands, most of which is located within Kern County (CAL Fire 2019). Some of these areas consist of relatively pristine native desert habitat including Joshua tree woodland, which provides important areas for raptor nesting and foraging. While no evidence of Swainson's Hawk nesting has been documented on public lands in the Antelope Valley to date, it may be expected that these lands, in combination with the remaining stands of Joshua tree, may provide vital nesting areas as renewable energy continues to expand throughout the western Antelope Valley.

4.3.3 U.S. Forest Service

The U.S. Forest Service (Forest Service), and agency of the U.S. Department of Agriculture (USDA), manages 154 national forests and 20 national grasslands consisting of 193 million acres (78.1 million hectares). The mission of the Forest Service is to "sustain the health, diversity, and productivity of the nation's forests and grasslands to meet the needs of present and future generations". Much like the BLM, the Forest Service manages its land for multiple uses including livestock grazing, timber harvesting, wildlife, and recreation among others. The Forest Service wildlife program conducts habitat restoration and assists with the protection of Federally listed species. Additionally, the Forest Service may choose to designate Species of Conservation Concern for plant and animal species whose long-term persistence within a national forest or grassland is of known conservation concern (USFS 2012).



The Forest Service manages roughly 58 million acres (23.5 million hectares) throughout California. Approximately 87,900 acres (35,600 hectares) of Forest Service managed land are located within the Antelope Valley (CAL Fire 2019). Additionally, the approximately 700,000-acre (280,000-hectare) Angeles National Forest is located immediately to the south of the Antelope Valley and the approximately 800,000-acre (320,000-hectare) San Bernardino National Forest is found to the southeast, both of which extend into the southernmost reaches of the Antelope Valley. Additional Forest Service lands are located to the north of the Antelope Valley northeast of the town of Bakersfield and extend northward throughout the State. While the Forest Service lands within and adjacent to the Antelope Valley do not provide nesting habitat for Swainson's Hawk, they do provide habitat for migrating and foraging raptors.

4.3.4 California State Parks

The California State Park System includes approximately 280 parks and 1.59 million acres (644,000 hectares). The Park's resource management program is tasked with the protection, restoration, and maintenance of natural resources within the Parks. Biologists within the State Parks system actively monitor sensitive species and recommend actions to assist with perpetuating the species viability within the region. Within the Antelope Valley, there are roughly 5,500 acres (2,200 hectares) of State Park lands.

4.3.5 Military Lands

Military lands in the western U.S. are concentrated areas of activity surrounded by vast open space that often provide for the conservation of wildlife habitats and species through Integrated Natural Resource Management Plans prepared for each installation. Within the Antelope Valley, land managed by the Department of Defense comprises approximately 276,000 acres (112,000 hectares). The habitat within the undeveloped portions of Edwards Air Force Base is dominated by native desert vegetation with some of the largest mesquite woodlands, Joshua trees, and three seasonally dry lakes. The largely un-surveyed Joshua tree potential nesting habitat and native desert foraging habitat of Edwards Air Force Base provide value to both migrating and nesting Swainson's Hawks.

4.3.6 Transition Habitat Conservancy

The Transition Habitat Conservancy (THC) is a 501(c)(3) non-profit organization with the primary goal of protecting transition zone and wildlife corridor ecosystems and their scenic, agricultural, and cultural resource values in the west Mojave Desert. THC provides education about the fragile nature of desert plants, animals, and ecosystems to connect people to nature. The Conceptual Area Preservation Plan (also known as the Portal Ridge Wildlife Preserve) was approved by the CDFW and includes 9,200 acres (3,723 hectares) that connects the Antelope Valley California Poppy State Natural Reserve and the Arthur B. Ripley Desert Woodland State Park to the U.S. Forest Service lands (Angeles National Forest) to the south. This landscape scale preserve provides wildlife corridors and landscape scale connectivity across elevation gradients from Joshua tree woodland to gray pine forest, to provide for possible climate change adaptations. THC manages approximately 11,431 acres (4,626 hectares) of land within and immediately adjacent to the Antelope Valley and has raised and spent over \$12 million here on land acquisition, restoration, fencing installation, waste clean-up, post wildfire restoration, and invasive plant control.

THC also implements impact mitigation required for renewable energy and energy transmission projects within the Antelope Valley and has done so for 17 projects impacting Swainson's Hawk nesting and foraging habitat. The mitigation for these projects has provided over 3,000 acres (1,200 hectares) of Joshua tree woodland managed in perpetuity for conservation of Swainson's Hawks. THC works to strategically implement permitted mitigation measures in their focused conservation areas to avoid fragmented or piecemeal mitigation implementation and continues to assist with the conservation of Swainson's Hawk nesting and foraging habitat as lands and funding become available.



4.4 Other Protections & Considerations

4.4.1 California Desert Conservation Area Plan

The California Desert Conservation Area Plan, drafted and first published by the BLM in 1980, encompasses more than 25 million acres (10.1 million hectares) of California's geologically and ecologically diverse deserts. The CDPA of 1994 set aside 3.5 million acres of wilderness within the Plan area, which designated Death Valley and Joshua Tree national parks and created the Mojave National Preserve. Within these regions are a number of sensitive species including the state and federally threatened desert tortoise (*Gopherus agassizii*), the federally endangered and state threatened Peninsular bighorn sheep (*Ovis canadensis nelsoni pop. 2*) and the state threatened Swainson's Hawk. The BLM is tasked with managing the California Desert Conservation Area for multiple uses such as economic, educational, scientific, and recreational, while maintaining, protecting, or enhancing the environmental, cultural, and aesthetic values of the desert. Additionally, the Plan provided a means for designation and management of Areas of Critical Environmental Concern. Swainson's Hawk have been documented to nest and forage within the Plan area and within the Mojave National Preserve, which protects important native desert nesting and foraging habitat for both breeding and migrating birds

4.4.2 West Mojave Plan

The West Mojave (WEMO) Plan (BLM 2005) is both a Habitat Conservation Plan and an amendment to the California Desert Conservation Area Plan. The WEMO Plan encompasses the entire extent of the Antelope Valley and the remaining areas of the West Mojave Desert. The goal of the plan was to "attempt at defining a regional strategy for conserving plant and animal species and their habitats and to define an efficient, equitable, and cost-effective process for complying with threatened and endangered species laws" (BLM 2005). The final WEMO Plan was adopted by BLM alone in 2006 and encompasses BLM public lands (BLM 2006). Non-federal lands are not covered by the WMP as neither the State nor local agencies adopted the plan. While the WMP cites Joshua trees as important for migrating Swainson's Hawks, among other species, it is made even more important by the knowledge of Swainson's Hawks utilizing Joshua trees for nesting within the Antelope Valley and foraging within Joshua tree woodland.

4.4.3 Desert Renewable Energy Conservation Plan

The Desert Renewable Energy Conservation Plan (DRECP) was developed by the CEC, CDFW, BLM, and the U.S. Fish and Wildlife Service with the goal of identifying public and private lands in the Mojave and Colorado/Sonoran deserts for development of renewable energy in Development Focus Areas (DFAs) where permitting processes for renewable energy projects could be more efficient. The DRECP also designated several million acres of public lands for conservation of significant landscapes, wildlife habitats, recreation areas and cultural resources. In 2016, the Secretary of the Interior adopted the Plan on the more than 8 million acres (3.2 million hectares) of BLM-managed public lands in California's deserts. However, the identification of DFAs and conservation opportunities on private lands were not formally adopted by the 6 Counties in the Plan, some of which developed their own renewable energy ordinances or plans. The DRECP provides for the conservation and management of protected species. However, there is very little mention of impacts to Swainson's Hawk and mitigation in part because data on the hawk in the DRECP Plan Area showed little presence outside of the Antelope and Owens valleys. The Conservation Management Actions in the DRECP for Swainson's hawk are as follows:

- Avoid use of rodenticides within five miles of active Swainson's Hawk nest(s).
- Conduct protocol surveys for Swainson's Hawk in the Antelope and Owens Valleys.
- Provide project impact setbacks of 0.5 mile from active nests for Swainson's Hawks.



4.4.4 Audubon Important Bird Areas

The Important Bird Areas (IBA) is a worldwide program initiated in 1985 by the global partnership of conservation organizations, BirdLife International, with the purpose of identifying and encouraging conservation of habitats used by declining avian populations. The U.S. partner, the National Audubon Society (Audubon), spearheads the effort to identify, monitor, and protect IBAs in the States. While IBAs do not provide regulatory authority to manage the lands in a particular way, they can be used to encourage conservation efforts and aid in mitigation (National Audubon Society 2008). The understanding of an IBA can be used as a guide for site-specific alterations in the area. Audubon recommends avoidance of IBAs as the most effective means of protection. Where avoidance is not feasible, impacts in IBAs should be minimized through scientifically defensible practices. The use of compensatory mitigation should only be considered as a last resort and should aim to protect or enhance existing habitat on or away from project sites. Developers and land managers are encouraged to consult with wildlife experts about their project impacts to help inform development decisions (Cooper 2004).

Each state or province is allowed to create IBA site criteria and standardized goals. Audubon California defines its IBAs as: 1) <100,000 acres (40,469 hectares) in extent, 2) possessing a bird community distinct from the surrounding region, and 3) satisfying one of the following IBA Criteria (Cooper 2004):

- Support over 1% of the global or 10% of the California population of one or more sensitive species (breeding or wintering).
- Support at least 10 sensitive species (federally or state-listed threatened or endangered species as well as California Species of Special Concern).
- Support 10,000 or more shorebirds that can be observed in one day.
- Support 5,000 or more waterfowl that can be observed in one day.

There are three IBAs which fall within portions of the Antelope Valley, all of which are of global priority: Antelope Valley, Tehachapi Mountains, and Santa Clara River Valley (Figure 6) (National Audubon Society 2022).

The Antelope Valley IBA encompasses approximately 687,000 acres (278,000 hectares) of northern Los Angeles and southern Kern Counties. This IBA includes Edwards Air Force Base east of SR 14, areas to the south of the base, and a large expanse west of SR 14 mostly falling north of Lancaster and Palmdale. Habitat within this IBA includes native desert, active and fallow agriculture, and three dry lakes which hold water during the winter months and attract large numbers of shorebirds and ducks. There are 334 bird species documented in this IBA, including many sensitive and several protected species (Ebird 2021). Also included in these records are many observations of both migrating and breeding Swainson's Hawks. All but two of the documented Swainson's Hawk nest sites fall within the Antelope Valley IBA (Bloom in prep.).

The Tehachapi Mountains IBA is located in the Tehachapi Mountains and foothills primarily outside of the Antelope Valley. Of the approximately 85,000 acres (34,000 hectares) that this IBA encompasses, roughly 3,600 acres (1,500 hectares) fall within the bounds of the Antelope Valley. This IBA contains Swainson's Hawk foraging and nesting habitat, as well as habitat for several other special status species including Golden Eagle (*Aquila chrysaetos*) and California Condor (*Gymnogyps californianus*).

The Santa Clara River Valley IBA intersects the southern edge of the Antelope Valley, south of the town of Palmdale, and follows the Santa Clara River to the southwest until it ends at the Pacific Ocean just south of the City of Ventura in Ventura County. Only the northernmost 900 acres (364 hectares) of the approximately 34,000 acres (14,000 hectares) Santa Clara River Valley IBA are located within the Antelope Valley. There are records of 353 bird species within this IBA (Ebird 2021).



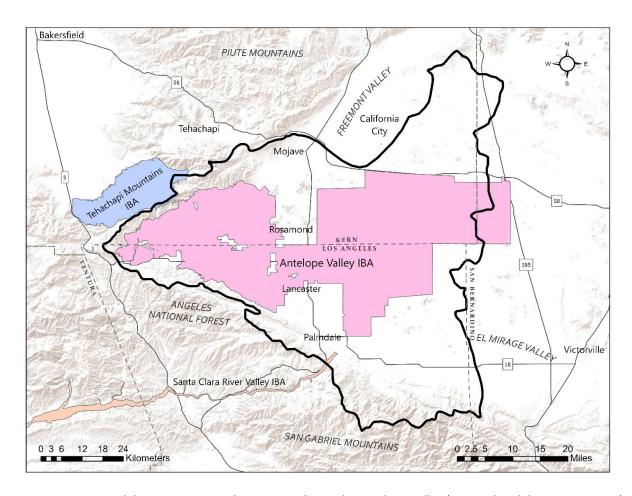


Figure 6. Audubon Important Bird Areas in and near the Antelope Valley (National Audubon Society 2022).

The Antelope Valley IBAs have been identified by Audubon as having global significance. Antelope Valley was labeled as "globally important" for several reasons. The remnant Joshua tree woodland in this area supports one of the farthest-west populations of LeConte's Thrasher in the state. The grassland bird community is most impressive in winter, when large numbers of raptors concentrate in the area. Large flocks of Vesper Sparrows, Horned Lark and Mountain Bluebirds also occur here, widely extirpated elsewhere in the Los Angeles area. The agricultural fields, especially alfalfa, are productive year-round. Winter brings Mountain Plover, whose flocks are among the last in southern California. After wet winters, nesting grassland species like Northern Harrier linger well into spring, and occasionally even attempt to breed. Swainson's Hawk maintains its southernmost breeding outpost in the state here. As this IBA lies in the path of a major spring migrant route for songbirds, these windbreaks can host hundreds of vireos and thrushes.

5.0 THREATS FACING THE ANTELOPE VALLEY SWAINSON'S HAWK

The Antelope Valley population of Swainson's Hawk is impacted by several primary threats, which combined cause significant cumulative and compounding impacts.



5.1 Renewable Energy Expansion

Renewable energy development has expanded rapidly throughout California, with solar electricity generation alone increasing by 350% between 2014 and 2019, and largely being constructed in California's deserts. With Senate Bill 100 (SB 100 De León, Chapter 312, Statutes of 2018) becoming law in 2018, California is required to utilize only renewable and zero-carbon energy resources to supply 100% of electric retail sales to customers by 2045. In order to satisfy these requirements, an increased sustained build-out of clean energy projects will need to occur at a record-breaking rate. This is expected to result in 6 gigawatts (GW) of renewable resources built annually, an increase from the 1 GW of solar and 300 megawatts (MW) or wind produced annually for the last decade and is likely to continue to disproportionately impact California's deserts (Gill et al. 2021). While transitioning from fossil fuels to renewable energy production is a necessary step, it must be done in a manner that does not unduly cause environmental and human harm.

This expansion of renewable energy has occurred at a significant rate in the Antelope Valley following the construction of the TRTP in 2016 with inconsistent mitigation for impacts to Swainson's Hawks. However, more recently, several projects have devoted focused attention to addressing mitigation. Based on available project information, the current extent of renewable energy development proposed for the Antelope Valley west of the SR 14 has a high likelihood of eliminating all documented Swainson's Hawk nesting territories on the west side of the Valley with many instances of the development being proposed for parcels containing, immediately adjacent to, and surrounding existing nest trees occupied as recently as 2021. Permanent nest territory abandonment, likely attributable to solar development, has been observed on several occasions in the Antelope Valley (Bloom unpubl.) Figure 7 shows a solar field and wind turbines in the northwest region of the Antelope Valley. Figure 8 depicts a map of the extent of built renewable energy development in the Antelope Valley and was created by digitizing renewable energy footprints as bounding polygons as provided in the most recent Google Earth imagery available from December 2020 (Google Earth 2020).



Figure 7. Renewable energy development in the northwest region of the Antelope Valley near Willow Springs.



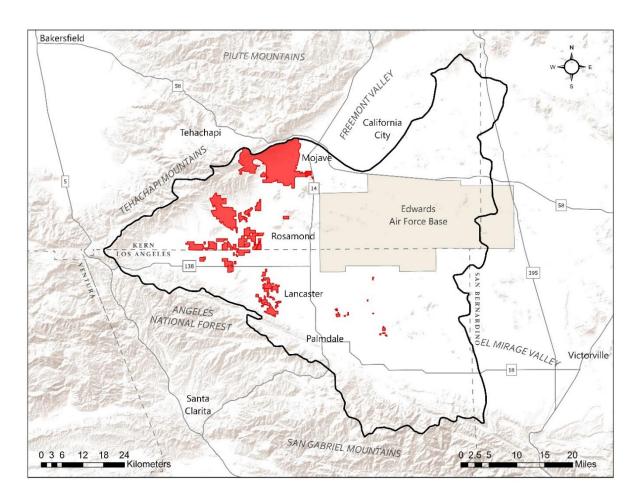


Figure 8. Extent of built renewable energy development in the Antelope Valley (Google Earth 2020).

5.2 Reduced Water Availability Leading to Agricultural Changes

The Antelope Valley is located within the South Lahontan Basin and includes the Antelope Valley Groundwater Basin. This region of the Mojave Desert has a long history of fluctuating water availability, experiencing periods of severe drought and ample rainfall, following the overall trend in California (Woodhouse et al. 2017). In general, the Antelope Valley is not known for an abundance of water availability and along with the rest of the state, is currently in a period of prolonged drought. Following more than 15 years of proceedings, the Antelope Valley Groundwater Adjudication was finalized in 2015 which included a declaration of overdraft of the Antelope Valley Groundwater Basin. With the adjudication, water rights were established and a ramp down of water production was ordered with serious implications for agricultural viability in the region.

The Mojave Desert has a long history of agriculture with the earliest evidence coming from the Paiute in the Owens Valley (Lawton et al. 1976) and it is possible that indigenous inhabitants of the Antelope Valley, some of which possessed a shared culture with the Paiute, may have practiced agriculture in some form as well. More modern farming practices began in earnest in the Valley around the mid-1800's, initiating the widespread conversion of native desert for cattle ranching, sheepherding, and crop cultivation with alfalfa becoming the most abundant crop by the 1920's (Norris 1982). With the widespread conversion of native desert to alfalfa, the foraging preferences of Swainson's Hawk appear to have followed this shift, apparently leading to alfalfa fields becoming the primary prey source for this population. This assumption is based on the locations of Swainson's Hawk nest trees, nearly all of



which are located immediately adjacent to remaining active or fallow alfalfa fields. The exceptions include several nesting territories within Joshua tree woodland and native desert (Bloom unpubl.).

Agriculture throughout California is facing increased pressure from conversion for urban development, new regulatory challenges, extreme climate events (droughts, floods, warmer temperatures), pests, and disease. Having experienced multi-year droughts historically, California has been able to support agricultural water demands with groundwater, winter snowpack, reservoirs, and canals. However, as water availability has decreased throughout the state and farmers experience additional external pressure, agricultural production has reduced overall (Thorne et al. 2018). The Antelope Valley is no exception. Where alfalfa was once abundant in the Antelope Valley, with estimates of 70,000 acres (28,000 hectares) (Drake 2019) at peak production, there now remains less than 8,000 acres (3,000 hectares) in 2021 (USDA-NASS 2021) as a direct result of decreased water supply, increased cost of water, and urban expansion. Alfalfa production declined by 75% in the Antelope Valley between 1970 and 1990 (Orloff and Gildersleeve 1991). In some instances, a progression of agricultural land use from active alfalfa to fallow alfalfa followed by nut orchards has been observed. The conversion to nut orchards has been observed to generally occur immediately prior to the land being sold for renewable energy development and may be an attempt to increase the value of the land prior to sale.

The reduction in water availability has severely reduced the economic viability of crop land cultivation and has resulted in a significant reduction of alfalfa cultivation as previously described. Furthermore, the increased cost of water creates greater difficulty when considering the cultivation of alfalfa for Swainson's Hawk conservation. It is important to consider the longevity of alfalfa production in the Antelope Valley when planning for the long-term conservation of Swainson's Hawk. As alfalfa fields are known to be favored by foraging Swainson's Hawk, producing a high density of prey, this conservation strategy encourages the preservation of alfalfa cultivation throughout the Antelope Valley. However, as the future of alfalfa in the Antelope Valley is uncertain, the primary conservation recommendation of this strategy is to conserve native desert habitat, focusing on Joshua tree woodland, creosote scrub, and other native desert vegetation communities in as pristine a state as possible. While alfalfa production may not be able to be supported in perpetuity in the Antelope Valley, short term preservation of this habitat type may provide an interim conservation mechanism while other conservation opportunities are developed (i.e., native desert restoration) or pursued simultaneously.

5.3 Urbanization

The Antelope Valley is one of the first areas in the Mojave Desert where significant homesteading occurred. Located on the margins of the desert and adjacent to mountain ranges, this region of the Mojave Desert is known for substantial aquifers with consistently high-water tables which allowed for agricultural production, drawing homesteaders to the region (Norris 1982). Currently, the Antelope Valley is home to several large urban cities of both Los Angeles and Kern counties. According to the United States (U.S.) Census Bureau, between 1990 and 2020 the populations of Lancaster and Palmdale have increased respectively from 97,291 to 173,516 (43.9%) and 68,917 to 169,450 (59.3%). While the rate of population growth has been slowing in the region since the 2010 census, urban sprawl has created a highly fragmented landscape surrounding the most densely populated portions of these cities and expanding into the more rural portions of the counties. There are currently 29 unincorporated towns and districts located throughout the Antelope Valley, of which 7 have populations greater than 10,000 and 22 have less than 10,000. Furthermore, the U.S. Census Bureau estimates that California's population will continue to expand by approximately 8% by 2025, increasing from 45.3 to 49.3 million persons with expected impacts across all regions of the State.

Today, the Antelope Valley's economic base is largely supported by aerospace and defense industries. Edwards Air Force Base consists of 301,000 acres (121,810 hectares), consisting largely of undeveloped or semi-improved land used for flight testing. Additionally, there are roughly 20 aerospace companies operating within the



Valley including several industry giants such as Northrup Grumman, Boeing, and Lockheed Martin. The presence of these industries continues to draw people to the area furthering urban expansion throughout the region.

While the Swainson's Hawk of the Central Valley are known to nest in more urban areas (Bloom 1980), this has never been observed to occur within the Antelope Valley. Trees surrounding rural, often abandoned, residences have been utilized here, but this population experiences high levels of disturbance from human activity in the form of nest or territory abandonment (Bloom unpubl.). Urbanization, leading to increased human activity and the removal of foraging habitat and nesting trees continues to negatively impact Swainson's Hawk in the Antelope Valley.

5.4 Climate Change

Global climate change, in combination with other threats, is expected to have a significant negative impact on Swainson's Hawks. According to Jackson (2021), ecosystem transformation in Mexico and the western U.S. resulting from global climate change including shrubland and chaparral are yielding to non-native annual grasslands. While precipitation is expected to increase globally, climate change will have different effects at a regional scale (IPCC 2001a, 2001b). The effects of these climate related shifts are manifesting in increased fire frequency, size, and intensity and prolonged drought.

In desert environments precipitation is often the most important environmental factor for species performance with clutch size and breeding success of desert breeding raptors linked to precipitation (Hustler and Howells 1990, Lloyd 1999). The biophysical characteristics of drylands, such as the Mojave Desert, make them highly vulnerable to the effects of climate change, which may lead to a decreased probability of raptor population persistence in arid regions (Maestre et al. 2012, Wichman 2003). There is reason to believe that the cumulative impacts of climate change may lead to a decline in prey abundance and nest trees, causing population suppression of raptors in southern California. Species already experiencing external limitations to population growth and stability are expected to be more severely impacted by the shifting climate. Furthermore, species with weak dispersal abilities relative to the rate of climate change may fail to fully occupy climatically suitable areas and may go extinct or become locally extirpated, despite suitable habitat available elsewhere (Sandel et al. 2011).

6.0 CONSERVATION OPPORTUNITIES

6.1 Habitat Conservation

Although habitat loss was not identified as the primary cause of the 91% decline of Swainson's Hawk in California, habitat loss in many regions was known to be a contributing factor (Bloom 1980). While some areas of the state have experienced relatively small levels of habitat loss or degradation, the loss of Antelope Valley Swainson's Hawk foraging habitat has been substantial with far less foraging habitat present in 2021 than was observed during the 1979 statewide Swainson's Hawk survey. This loss of habitat is a direct result of renewable energy expansion, changes in agricultural production, urbanization, and climate change.

A combination of implementing both long-term and short-term habitat conservation will be vital for the continued presence of Swainson's Hawk in the Antelope Valley. Long-term conservation means preserving native Mojave Desert habitats of the kind used historically by Swainson's Hawk that is not dependent on anthropogenically derived water. Short-term habitat conservation may include any place that currently grows alfalfa, formerly grew alfalfa, and could grow alfalfa. While the goal for alfalfa preservation should be to cultivate in perpetuity, water insecurity in combination with chronic effects of climate change may make this increasingly more difficult. Thus, alfalfa cultivation may be more valuable when considered in the short-term as it can be more productive in terms of number of young hawks produced per acre but has the uncertainty of the unknown future.



6.1.1 Recommendations for Habitat Mitigation

The CDFW and CEC 2010 guidance provides recommendations for offsetting the impacts to Swainson's Hawk foraging habitat with compensatory mitigation in the form of Habitat Management (HM) lands. HM lands should be provided within the Antelope Valley Swainson's Hawk breeding range at a minimum 2:1 ratio for such habitat impacted within a five-mile radius of Swainson's Hawk nests active within the previous 5 years. While the guidance does not provide recommendations for loss of nesting territories, it is our strong recommendation that additional HM lands be provided when this occurs. These additional HM lands required for loss of nesting territories should be provided at a minimum 3:1 ratio for habitat impacted within a five-mile radius of Swainson's Hawk nests active within the previous 5 years. The nesting territory mitigation lands should include the presence and maintenance of suitable nesting trees adjacent to quality foraging habitat. Furthermore, a biological assessment should be performed by a raptor biologist for all potential mitigation lands being considered for acquisition in order to determine their value for Swainson's Hawk.

When analyzing lands for Swainson's Hawk conservation value, the following areas and specific habitats within the Antelope Valley of Kern and Los Angeles counties should be prioritized for obtaining conservation easements on, acquiring, and managing for conservation:

- 1. Areas containing and immediately surrounding active nest sites.
- 2. Areas within occupied nesting territories.
- 3. Areas within recently occupied nesting territories, adjacent to currently occupied territories.
- 4. Areas within unoccupied viable territories.
- 5. Native desert containing Joshua trees outside of known territories.
- 6. All other native desert habitats.
- 7. Fallow alfalfa or agricultural fields near to Joshua tree nesting habitat, suitable for Joshua tree reestablishment.
- 8. Areas adjacent to urban woodland such as golf courses, local parks, and groves of mature but live ranch trees, but not near largely urbanized areas.

Conservation of foraging and nesting habitat containing and immediately surrounding nest sites should be given the highest priority as they are likely some of the most ecologically energy efficient acreages in addition to providing a buffer from future development in the region. Home range of breeding adults varies greatly depending on a variety of factors including available foraging habitat and sex. Swainson's Hawks held larger home ranges when nesting in areas with crop types unsuitable for foraging and smaller home ranges were observed where quality foraging habitat was nearby (Bechard et al. 2020). Male Swainson's Hawks exhibited larger home ranges while those of female Swainson's Hawks were smaller (Bechard et al. 2020). A space use study of the Antelope Valley Swainson's Hawk population has been initiated and preliminary data from three adult males nesting to the east of the SR 14 suggest a home range radius of 1 to 5 miles. Thus, it is recommended that land within 5 miles of nests be prioritized for conservation (Figure 9). Selection of conservation lands for a given nesting territory may be further refined by telemetry study of the nesting pair.

When considering habitats to conserve for Swainson's Hawk nesting and foraging, habitat categories should be prioritized for acquisition as follows:

- 1. Joshua tree woodland.
- 2. Creosote scrub.
- 3. Other native desert vegetation communities.
- 4. Actively cultivated alfalfa.
- 5. Fallow agriculture, with older acreages often being more ecologically valuable.



Depending on the quality of habitat, the following actions may be recommended to improve the conserved lands to encourage longevity of the currently active territory, encourage re-establishment within an existing inactive territory, or encourage additional recruitment of nesting pairs:

- Adding potential nest trees with either long- or short-term irrigation
- Supplemental watering of confirmed or potential nest trees.
- Restoration of native desert habitat.
- Cultivation of alfalfa.

The size of Swainson's Hawk conservation areas needed to support an occupied territory will vary depending upon the quality of foraging habitat within and surrounding them. In general, when considering the size and distribution of conservation lands which may provide the greatest potential for conservation success, the following principles of island biogeography as applied to nature preserves should help guide the selection (Diamond 1975, Diamond 1976, MacArthur and Wilson 1967, May 1975):

- Larger reserves can hold more species than a small reserve.
- Reserves located close to other reserves can hold more species than a remote reserve.
- A group of reserves that are tenuously connected to, or at least clustered near, each other will support more species than a group of reserves that are disjunct or arrayed in a line.
- A round reserve will hold more species than an elongated one.

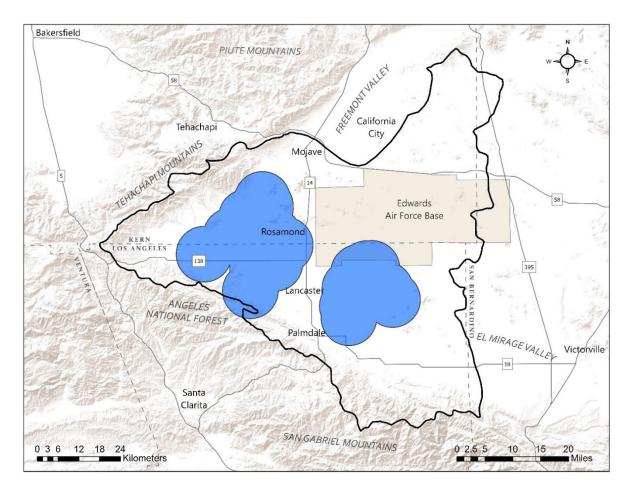


Figure 9. Five-mile buffered radius surrounding Swainson's Hawk Territories in the Antelope Valley, CA.



While a map of suitable Swainson's Hawk habitat within the Antelope Valley is not provided in this conservation strategy, the Antelope Valley Regional Conservation Investment Strategy (RCIS) has done so for regions of the Valley within Los Angeles County (ICF 2021).²

6.1.2 Importance of Native Desert Preservation & Restoration

Long-term conservation of nesting and foraging habitat is vital for the continued presence of Swainson's Hawk in the Antelope Valley. As alfalfa is disappearing from the Antelope Valley, long-term habitat preservation and restoration efforts should focus primarily on native Mojave Desert habitats of the kind used historically by Swainson's Hawk which are not dependent upon anthropogenically derived water. Native habitats common to the Antelope Valley that Swainson's Hawk are known to forage in or are likely to forage in include Joshua tree woodland, creosote scrub, white bursage scrub, spiny hop sage, greasewood, and saltbush.

In the Mojave Desert of California, Joshua tree woodland is probably the most important of dominant native habitat for Swainson's Hawks as it provides the tallest, one of the longest lived, and most abundant native tree species in the region, supplying not only potential nest trees but also hunting perches in a habitat of diverse rodents, birds, and reptiles. Joshua trees serve as umbrella species as they provide shelter and food for many desert wildlife species. Swainson's Hawk are not alone in their utilization of Joshua trees for nesting. Many species of bird, small desert mammals, and reptiles hide in or at the base of Joshua trees. Furthermore, the Joshua tree foliage, flowers, and fruit provide nourishment and shade for wildlife. Fallen branches or fallen deceased trees provide stabilized soil providing protection from the windy environment of the Antelope Valley. Essentially, Joshua trees are islands from which other species of desert vegetation can sprout and disperse. When burned, Joshua trees may resprout if the burn is not intense.

The value and importance of native desert land, particularly Joshua tree habitat cannot be overstated. However, 60 years ago, it was nearly impossible for the Mojave Desert to burn as much of the earth between perennial shrubs such as creosote, white bursage, and Joshua tree was barren. Today thousands of acres of native desert, has been transformed and degraded by a variety of volatile, invasive weeds covering the desert floor. The weeds not only reduce vertebrate diversity, abundance, and their availability as prey, but create a significant fire hazard that can eliminate hundreds of Joshua trees in a day. Thus, when evaluating Swainson's Hawk habitat, less weedy desert should always be prioritized as foraging and nesting habitat over that which has been severely invaded by exotic vegetation. Disturbed native desert habitat may be encouraged to return to more favorable Swainson's Hawk foraging habitat through restoration actions. These actions may include the removal and management of non-native and invasive plant species, planting of native plants, spreading of native plant seeds, and short-term watering to encourage native species establishment and success.

In addition to Swainson's Hawk there are at least 12 other special status species known to utilize native desert habitat in the Antelope Valley (Table 1). Thus, preservation of native desert for Swainson's Hawk will be beneficial for these sensitive species as well.

²ICF. 2021. Antelope Valley Regional Conservation Investment Strategy. Final. November. (ICF 313.19.) San Diego, California. Prepared for Desert Mountains Conservation Authority, Quartz Hill, California. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=197234&inline



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Table 1. Special status species that utilize native desert habitat in the Antelope Valley.

Common Name	Scientific Name Federal Status		State Status	
Desert tortoise	Gopherus agassizii	Threatened	Threatened (Candidate Endangered)	
Swainson's Hawk	Buteo swainsoni	N/A	Threatened	
American Peregrine Falcon	Falco peregrinus	N/A	Fully Protected	
Golden Eagle	Aquila chrysaetos	N/A	Fully Protected	
White-tailed Kite	Elanus leucurus	N/A	Fully Protected	
Burrowing Owl	Athene cunicularia	N/A	Species of Special Concern	
Short-eared Owl	Asio flammeus	N/A	Species of Special Concern	
Long-eared Owl	Asio otus	N/A	Species of Special Concern	
Mountain Plover	Charadrius montanus	N/A	Species of Special Concern	
Loggerhead Shrike	Lanius ludovicianus	N/A	Species of Special Concern	
Vermillion Flycatcher	Pyrocephalus rubinus	N/A	Species of Special Concern	
American badger	Taxidea taxus	N/A Species of Special Concern		

6.1.3 Importance of Alfalfa Cultivation

The importance of continued cultivation of alfalfa in the Antelope Valley for Swainson's Hawk conservation has been discussed in detail throughout this document. In summary, alfalfa cultivation is a vitally important foraging habitat and in combination with watered windrows, also provides for nesting habitat for Swainson's Hawks. In addition to Swainson's Hawks, there are at least 15 other special status species that benefit extensively from agricultural land within the Antelope Valley (Table 2). By providing for Swainson's Hawk conservation in the form of alfalfa preservation, it will help to facilitate the continued presence of these sensitive species in the Valley as well.

Table 2. Special status species that utilize agricultural lands in the Antelope Valley.

Common Name	Scientific Name	Federal Status	State Status
Swainson's Hawk	Buteo swainsoni	N/A	Threatened
Tricolored Blackbird	Agelaius tricolor	N/A	Threatened
White-tailed Kite	Elanus leucurus	N/A	Fully Protected
American Peregrine Falcon	Falco peregrinus anatum	N/A	Fully Protected
Purple Martin	Progne subis	N/A	Species of Special Concern
Bank Swallow	Riparia riparia	N/A	Species of Special Concern
Burrowing Owl	Athene cunicularia	N/A	Species of Special Concern
Short-eared Owl	Asio flammeus	N/A	Species of Special Concern
Long-eared Owl	Asio otus	N/A	Species of Special Concern
Northern Harrier	Circus cyaneus	N/A	Species of Special Concern
Mountain Plover	Charadrius montanus	N/A	Species of Special Concern
Loggerhead Shrike	Lanius Iudovicianus	N/A	Species of Special Concern
Vermilion Flycatcher	Pyrocephalus rubinus	N/A	Species of Special Concern
Grasshopper Sparrow	Ammodramus savannarum	N/A	Species of Special Concern
Yellow-breasted Chat	Icteria virens	N/A	Species of Special Concern
Yellow-headed Blackbird	Xanthocephalus xanthocephalus	N/A	Species of Special Concern



6.1.4 Building Upon Existing Conserved Areas of the Antelope Valley

This document describes many areas of previously conserved lands within the Antelope Valley managed by various entities. It is recommended that the acquisition of conservation lands be targeted to occur adjacent to these previously conserved areas where quality Swainson's Hawk habitat is present. One potential outcome of this strategy is to create Swainson's Hawk reserves, containing high quality Swainson's Hawk habitat throughout the Valley from which the population may continue to grow.

6.2 Nest Tree Conservation

Given high nest territory fidelity and short natal and breeding dispersal distances of Swainson's Hawk, the primary goal of conservation for this population must be the preservation of extant Swainson's Hawk territories occupied within the last five years. The majority of adult Swainson's Hawks breeding in the Valley today will continue to nest in the same trees each year, assuming that the habitat remains, and extensive disturbance does not occur, and the young from these territories ultimately breed close to their parents. In order to preserve these territories, it is recommended that the land containing and surrounding the occupied nest tree(s) be prioritized for acquisition or conservation easement. When direct and indirect project impacts cause nest territories to be abandoned by Swainson's Hawks, these actions should be mitigated for by providing both HM lands and supporting (i.e., planting and watering) additional potential Swainson's Hawk nest trees. Many formerly or currently active alfalfa lands lack potential Swainson's Hawk nest trees and can be planted with long-lived, relatively drought tolerant non-native trees such as Aleppo pine, locust, and elm or native trees such as cottonwoods, willows, and Joshua trees. However, cottonwoods and willows should only be planted where long-term water is available. Conserved native desert can also be improved upon as Swainson's Hawk nesting habitat with the planting and supplemental watering of native trees, particularly Joshua trees.

6.3 Management of Conservation Lands

The long-term management of conservation lands for Swainson's Hawk in the Antelope Valley should involve a standardized, yet adjustable approach. Additionally, communication between all parties involved should be frequent and well-coordinated. Conservation lands will likely require fencing, removal of illegally dumped material, and potentially, irrigation maintenance, weed eradication, and other long-term restoration measures. Additionally, management must consider the increasing frequency of fire in the Antelope Valley and include fire suppression actions as well as prohibition of off-highway vehicle (OHV) use, hunting, target shooting, and plinking. Management of fuel loads for fire prevention on conservation lands is paramount for the long-term preservation of Swainson's Hawk foraging and nesting habitat.

6.4 Annual Population Assessment

The Antelope Valley population of Swainson's Hawk increased from one known nesting territory in 1979 to 14 in 2021. This population appears to have rebounded along with other regions of California including the Central Valley (Battistone et al. 2019). Desert valleys east of the Sierra Nevada have also increased in numbers of nesting pairs, but productivity can be low (Bloom unpubl.). However, the continued conversion of thousands of acres of native desert and former agricultural fields into solar fields and wind farms coupled with a reduction in water previously used for agricultural irrigation is seriously threatening this southernmost California population. Compared to the 9 territories that produced 19 young in 2020, only 5 young fledged from 3 territories in 2021. This latest outcome does not bode well for recruitment of returning young to this population in the future. The potential for a future decreasing population due to loss of foraging and nesting habitat is real and the annual monitoring of all known nesting territories, potentially occupied habitats, and the banding of all young is a high priority. Results of



the annual assessment should be used to prioritize and assess the placement of conservation reserves for the species as well as to inform the placement of future proposed solar and wind energy, and urban development.

7.0 OTHER IMPORTANT ISSUES

7.1 Consulting Biologists

The presence of consulting biologists and others near active Swainson's Hawk nests has increased with the expansion of multiple renewable energy developments each year in the Antelope Valley. As such, the potential for disturbance to this small population of nesting Swainson's Hawks has also increased markedly. Often during the nesting season, known nest trees have the potential to be disturbed, or are disturbed on multiple occasions by the same and or multiple consulting firms all performing the required 5-mile radius Swainson's Hawk CDFW and CEC protocol level surveys, botanical surveys, archaeological surveys, etc. It is our recommendation that a system for consolidating Swainson's Hawk as well as other survey efforts endorsed by the CDFW be created by permitting agencies (Kern County, Los Angeles County, City of Lancaster, City of Palmdale, etc.) to reduce disturbance and subsequent nest failure, particularly when the nests have already been registered with the CNDDB. We are aware of several instances over the last decade during which surveyors in the Antelope Valley were within 100 yards of active Swainson's Hawk nests which failed immediately thereafter. During 2021, we observed evidence of a parked vehicle directly under an active Swainson's Hawk nest tree with eggs that failed immediately thereafter.

7.2 Pesticide Use

Hundreds of raptors of a wide variety of species are killed annually in California by pesticides. Rodenticides applied in the Antelope Valley are likely the single most important poison effecting wildlife on the Valley floor. As a rule, due to their toxicity, secondary poisonings, and propensity to kill non-target species, rodenticides should be used rarely if ever in the urban environment, and never in native desert or the agricultural environment where predators are most frequently poisoned.

8.0 ADDITIONAL RESEARCH TOPICS

8.1 Antelope Valley Genetics Study

The Antelope Valley Swainson's Hawk breeding population went through a bottleneck prior to 1979 when only one territory was found. Over the several decades the population has grown slowly to the current 14 known nesting pairs in 2021. The species in California is known to be strongly philopatric (Woodbridge et al. 1991, Bloom unpubl.) and thus valuable to assess the level of relatedness between Swainson's Hawk individuals in the Antelope Valley and in comparison to the closest known breeding territories in the southern Central Valley and in the Owens Valley, and whether the Antelope Valley population might be more related to each other than more distant populations, and hence another example of genetic structuring in California (Hull et al. 2008).

We have been opportunistically studying various aspects of Swainson's Hawk ecology in the Antelope Valley of Los Angeles and Kern counties in the western Mojave Desert since 1979 when the first territory was reported (Bloom 1980). In order to examine intrapopulation relatedness of local breeders and their progeny, we began collecting tissue samples including both molted flight feathers found on the ground and collected contour feathers from adults, and the blood feathers from nestlings from 2015 to 2021. Funding is urgently needed to answer the above conservation genetics questions related to this small population and apparent limited dispersal ability.



8.2 Current Antelope Valley Habitat and Space Use Study

Adult and juvenile movements of Swainson's Hawks within and from the Antelope Valley remains largely unknown. In order to maintain and potentially increase this breeding population, we need to know how nesting pairs utilize space and habitats, including solar installations, various crops, fallow lands, and native desert. Specifically, we need to know whether certain habitats or crops are used disproportionately more than others and how much space breeding pairs require. In order to better understand these dynamics, Bloom Research, Inc. has initiated a radio-telemetry movement study of adult and juvenile Swainson's Hawks with the intention of monitoring their movements on the breeding grounds over the course of two breeding seasons. Complete funding for this effort has yet to be provided.

8.3 Historic Space Use Study Relative to Crop Type, Solar Development, and Urbanization

Further study is required to understand the full impact that changes in cropland cultivation and the expansion of renewable energy and urbanization has had on Swainson's Hawk in the Antelope Valley. There appear to be strong relationships between nest locations, alfalfa, and native desert habitat, as well as the extirpation pattern of breeding pairs relative to placement of solar development. What was an increasing Antelope Valley Swainson's Hawk population prior to the decline in alfalfa cultivation and TRTP transmission line completion has potentially become a decreasing population with the near build-out of solar in some areas of the Valley.

While further study of this population will facilitate conservation, it does not supersede the need for substantial and urgent conservation action to reduce the risk of extirpation of Swainson's Hawk from the Antelope Valley of the western Mojave Desert.

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Transmission Technical Services Department

9400 Oakdale Ave Chatsworth, CA 91311 SC9314

December 21, 2022

Janice Mayes Kern County Planning and Natural Resources Department mayesj@kerncounty.com

Subject: Bullhead Solar Project

DCF: 2401-22NC

The Transmission Department of SoCalGas does not operate any facilities within your proposed improvement. However, the Distribution Department of SoCalGas may maintain and operate facilities within your project scope.

To assure no conflict with the Distribution's pipeline system, please e-mail them at:

NorthwestDistributionUtilityRequest@semprautilities.com

Best Regards,
Nerses Papazyan
SoCalGas Transmission Technical Services
SoCalGasTransmissionUtilityReguest@semprautilities.com

Lorelei H. Oviatt, AICP, Director

2700 "M" Street, Suite 100 Bakersfield, CA 93301-2323 Phone: (661) 862-8600

Fax: (661) 862-8601 TTY Relay 1-800-735-2929

Email: planning@kerncounty.com Web Address: http://kernplanning.com/



PLANNING AND NATURAL RESOURCES DEPARTMENT

Planning
Community Development
Administrative Operations

Date: November 22, 2022

To: See attached Mailing List



FROM: Kern County Planning and Natural

Resources Department Attn: Janice Mayes, Planner III 2700 "M" Street, Suite 100 Bakersfield, CA 93301

(661) 862-8793

mayesj@kerncounty.com

RE: NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT (EIR) FOR THE BULLHEAD SOLAR PROJECT, BY EDF RENEWABLES, LLC (PP22404)

The Kern County Planning and Natural Resources Department, as Lead Agency (pursuant to California Environmental Quality Act [CEQA] Guidelines Section 15052) has determined that preparation of an Environmental Impact Report (EIR) (pursuant to CEQA Guidelines Section 15161) is necessary for the proposed project identified below. The Planning and Natural Resources Department solicits the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities about the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval of the project.

You are invited to view the NOP and Initial Study and submit written comments regarding the scope and content of the environmental information in connection with the proposed project should you wish to do so. Due to limits mandated by State law, your response must be received by <u>December 23, 2022 at 5:00 p.m.</u> In addition, comments can also be submitted at a <u>scoping meeting</u> that will be held at the Kern County Planning and Natural Resources Department on <u>December 14, 2022 at 1:30 p.m.</u> at the address shown above.

PROJECT TITLE: Bullhead Solar Project, By EDF Renewables, LLC; GPA No. 8, Map No. 214; CUP No. 48, Map No. 214; CUP No. 49, Map No. 214; Ag Exclusion Map No. 214; SPA No. 42, Map No. 231; SPA No. 43, Map 231; ZCC No. 158, Map No. 231; CUP No. 121, Map No. 231; CUP No. 122, Map No. 231; Vacation of Public Access Easements 03 098 231, Map No. 231; SPA No. 35, Map No. 232; SPA No. 36, Map No. 232; ZCC No. 36, Map No. 232; CUP No. 49, Map No. 232; CUP No. 50, Map No. 232.

PROJECT LOCATION: The project site is located within the unincorporated area of Kern County, north and south of Dawn Road west of Sierra Hwy 14 between 105th Street West and 75th Street West. The project site is just south of the City of Rosamond and would connect to the Big Beau Solar site via private road. Other communities in the vicinity of the project site include the cities of Lancaster, Palmdale, and Neenach in Los Angeles County, which are roughly 17 miles southeast, 24 miles southeast, and 18 miles southwest of the project, respectively. Edwards Air Force Base is 22 miles east of the project's eastern boundary.

The project site is located on 1,343.2-acres comprised of 21 privately owned parcels in Section 1 of Township 9 North, Range 14 West; Sections 5 and 6 of Township 9 North, Range 13 West; and Sections 31, 32, and 33 of Township 10 North, Range 13W in the San Bernardino Base and Meridian (SBB&M).

PROJECT DESCRIPTION: The Bullhead Solar Project (proposed project) involves the construction and operation of a solar facility and associated infrastructure, including telecommunications towers and internal roads, to generate up to 270 megawatts (MW) of renewable electrical energy with a Battery Energy Storage System capable of storing approximately 270 MW, or 1,080 megawatt-hours (MWh) of energy, within approximately 25 acres of the 1,343.2 acres project site. The project is proposed by EDF Renewable, LLC, and would be developed near the existing Big Beau Solar Project.

Implementation of the project, as proposed, would include:

- Amendments to the Land Use Element of the Willow Springs Specific Plan as follows:
 - Specific Plan Amendment No. 43, Map No. 231 from Map Code 5.3/4.4 (Maximum 10 Units per Net Acre/Comprehensive Planning Area) to Map Code 5.3 (Maximum 10 Units per Net Acre) on approximately 288 acres, and from Map Code 6.2/4.4 (General Commercial/Comprehensive Planning Area) to Map Code 6.2 (General Commercial) on approximately 15 acres; and
 - Specific Plan Amendment No. 35, Map No. 232 from Map Code 5.3/4.4 (Maximum 10 Units per Net Acre/Comprehensive Planning Area) to Map Code 5.3 (Maximum 10 Units per Net Acre) on approximately 160 acres;
- · Changes in Zone Classifications as follows:
 - Zone Classification Change No. 158, Map No. 231 from E(5) RS MH FPS (Estate, 5 Acres, Residential Suburban, Mobile Home Combining, Flood Plain Secondary Combining) to A FPS (Exclusive Agriculture, Flood Plain Secondary Combining), or a more restrictive district, on approximately 94 acres and from E(2 ½) RS MH FPS (Estate, 2 ½ Acres, Residential Suburban, Mobilehome Combining, Flood Plain Secondary Combining) district, to A FPS (Exclusive Agriculture, Flood Plain Secondary Combining), or a more restrictive district, on approximately 215.7 acres; and
 - O Zone Classification Change No. 36, Map No. 232 from E (5) RS FPS (Estate, 5 Acres, Residential Suburban, Flood Plain Secondary Combining) district on approximately 8.4 acres, and E 2 ½ RS FPS (Estate, 2 ½ Acres, Residential Suburban, Flood Plain Secondary Combining) district on approximately 151.7 acres to A FPS (Exclusive Agriculture, Flood Plain Secondary Combining), or a more restrictive district.
- Conditional Use Permits to allow for the construction and operations of a combined approximate 270 MW solar facility, as well as ancillary structures including an approximate 270 MW battery storage system with up to 1,080 MWh of storage capacity, within the A (Exclusive Agriculture) Zone District pursuant to Section 19.12.030.G of the Kern County Zoning Ordinance (in Zone Maps 214, 231, and 232):
 - o Conditional Use Permit No. 48, Map No. 214 for approximately 842 acres;
 - Conditional Use Permit No. 121, Map No. 231 for approximately 331 acres; and
 - o Conditional Use Permit No. 50, Map No. 232 for approximately 160 acres
- Conditional Use Permits to allow the construction and operation of a microwave telecommunications tower, within the A (Exclusive Agriculture) Zone District pursuant to Section 19.12.030.f F of the Kern County Zoning Ordinance (in Zone Maps 214, 231, and 232):
 - Conditional Use Permit No. 49, Map No. 214;
 - o Conditional Use Permit NO. 122, Map No. 231; and
 - Conditional Use Permit No. 49, Map No. 232

- Amendment to the Circulation Element of the Kern County General Plan No. 8, Map No. 214 to remove future road reservations on section and mid-section lines within the project boundaries of Sections 31, 32, and 33 of Township 10 North, Range 13 West, (SBB&M);
- Amendments to the Circulation Element of the Willow Springs Specific Plan as follows:
 - Specific Plan Amendment No. 42, Map No. 231 to remove future road reservations on section and midsection lines within the project boundaries of Section 6, Township 9 North, Range 13 West, SBB&M; and
 - o Specific Plan Amendment No. 36, Map No. 232 to remove future road reservations on section lines with the project boundaries of Section 1 of Township 9 North, Range 14 West, SBB&M;
- Petition for Exclusion from the Boundaries from Agricultural Preserve 24, in Zone Map No. 214, for approximately 842 acres of the project site; and
- Non-summary Vacations of various public access easements in Zone Map No. 232, in and around the project site.

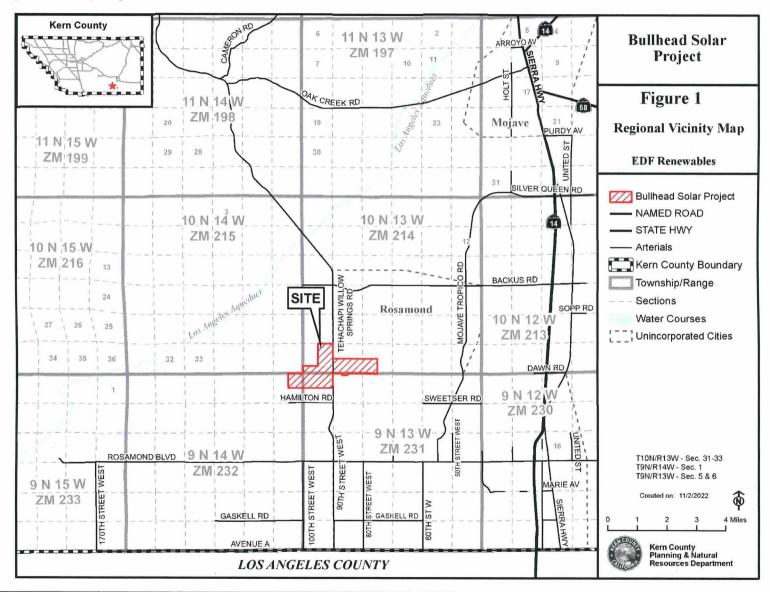
Document can be viewed online at: https://kernplanning.com/planning/notices-of-preparation/

Signature:

Name: Janice Mayes, Planner III



Figure 1: Regional Vicinity Map



Appendix B: Visual Resources Technical Report



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BULLHEAD SOLAR PROJECT VISUAL RESOURCES TECHNICAL REPORT

PREPARED FOR:

EDF Renewables 1999 Harrison Street, Suite 675 Oakland, CA 94612

PREPARED BY:

ICF 49 Discovery, Suite 250 Irvine, CA 92618

August 2022





Executive Summary

In accordance with the California Environmental Quality Act (CEQA), the purpose of this Visual Resources Technical Report is to determine potential impacts on aesthetic and visual resources from the proposed up-to-270-megawatt (MW) alternating current (AC) solar photovoltaic (PV) facility and up-to-270-MW battery storage development known as the Bullhead Solar Project (project), as proposed by EDF Renewables (EDFR).

Located in southern Kern County in central California, the project would cover approximately 1,359.50 acres of private land that is generally undeveloped desert. The proposed solar development project would include PV panels, inverters, converters, generators, foundations, transformers, preferred and alternative generation-tie routes to the Valentine, Soleil, and Rose Meadow Substations, laydown yards, a meteorological station, a microwave/communication tower, an onsite operations and maintenance facility, a substation, dirt or gravel access roads, and chainlink perimeter fencing.

The proposed project would be located in a rural area. Therefore, the project would not conflict with zoning or other regulations governing scenic quality and scenic vistas in an urbanized area. In addition, as discussed in Chapter 3, *Regulatory Setting*, there are no federal, state, or locally designated scenic highways in the project area; therefore, the proposed project would not affect such resources.

Operation of a solar PV power generation facility of this size would introduce a new infrastructure and other anthropogenic features, alter the existing visual character of the immediate landscape from one that is rural to one that is more industrial in nature, be seen by viewers with high, moderately high, and moderate sensitivity, and modify the existing scenic quality through the intrusion of human-made elements on land that is currently vacant. Mitigation Measures (MM) VIS-1 through VIS-3 would help reduce visual impacts associated with the proposed project by limiting native vegetation removal, using privacy fencing, seeding temporarily disturbed areas with native plant species, reducing the visibility of project features, and ensuring that the site is kept free of debris and trash. In addition, MM VIS-4 would ensure that the latest PV panel technologies would be used to reduce glare impacts.

County of Kern Executive Summary

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County of Kern Contents

Acronyms

AVE area of visual effect

BESS battery energy storage systems

Caltrans California Department of Transportation

CEQA California Environmental Quality Act

EDFR EDF Renewables

gen-tie generation-tie

HSR High-Speed Rail

kV kilovolt KV key view

MW megawatts

O&M operations and maintenance

project Bullhead Solar Project

PV photovoltaic

SCE Southern California Edison

SR State Route

TRTP Tehachapi Renewable Transmission Project

1.1 Project Description

The Bullhead Solar Project (project) is located in southern Kern County, California, approximately 12 miles southwest of State Route (SR) 58 and approximately 34 miles east of Interstate 5. The Antelope Valley Freeway (SR 14) is approximately 7 miles to the east, and SR 138 (West Avenue D) is approximately 9 miles to the south of the site in Los Angeles County. The project site is generally bound by Favorito Avenue to the south, Champagne Avenue to the north, 120th Street West to the west, and 80th Street West to the east. Tehachapi Willow Springs Road bisects the eastern side of the project site.

The proposed project would include up to 270 megawatts (MW) solar and up to 270 MW battery energy storage. The project includes solar development with associated photovoltaic (PV) panels, inverters, converters, generators, foundations, transformers, and preferred and optional generationtie (gen-tie) routes to the Rosamond and Whirlwind substations, only one of which would be constructed. The project would also include laydown yards, a meteorological station, a microwave/communication tower, and a substation.

EDF Renewables (EDFR) is committed to creating a state-of-the-art solar energy and battery storage project that would be constructed in a manner that minimizes environmental impacts to the greatest extent feasible. The proposed project includes four options for gen-tie routes, including two deviations to one option and one deviation to another. Only one route would be constructed. Three project optional gen-tie routes—Rosamond Gen-tie Options 1, 2, and 3, including one deviation identified as Rosamond Gen-tie Option 3.1—which would travel south from the project boundary and connect to the Rosamond Switching Station. The Rosamond Switching Station is planned to be constructed by Los Angeles Department of Water and Power (LADWP) by December 2025. One optional project gen-tie route—Whirlwind Gen-tie Option 1, including two deviation routes identified as Whirlwind Gen-tie Option 1.1 and Whirlwind Gen-tie Option 1.2—would cross underneath Southern California Edison's (SCE's) Tehachapi Renewable Transmission Project (TRTP) to the east of the project site and connect to the existing Whirlwind Substation. SCE's TRTP 220/500-kilovolt (kV) corridor travels through Whirlwind Gen-tie Option 1 and connects SCE's Vincent Substation with SCE's Windhub Substation to the south and north of the project site, respectively. It should also be noted that approximately 5.6 miles of Whirlwind Option 1 would utilize the existing Antelope Valley Transmission Line, constructing new line on a second circuit. This portion of the line would result in minimal change from the existing conditions of that corridor. Many of the lands surrounding the site have either been approved for, or are in the planning stages of, development for solar or wind energy.

Although existing roads would be used to the greatest extent possible, potential unpaved roads may need to be improved to serve as access roads from the existing road network to the project. If 120^{th} Street West were used as a secondary access route, portions of this road may require additional improvements near Avenue of the Stars; however, 120^{th} Street West recently has been graded and widened in association with other nearby solar projects. Therefore, substantive improvements are not expected to be needed for the Bullhead Solar Project. If needed, improvement activities may

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include grading, widening up to 50 feet, compacting, or applying an approved soil stabilizer. In addition, a 20-foot-wide minimum (dirt) road is required around the perimeter of the solar arrays for the fire department and emergency vehicles. Additional internal dirt maintenance roads would be located throughout the project area. Spacing between each row would depend on final panel type, orientation, and any County regulations. Internal access roads would be up to 20 feet wide and cleared and compacted for equipment and emergency vehicle travel and access to the solar blocks. These project site access roads would remain in place for ongoing operations and maintenance (0&M) activities after construction is completed.

The substation site would be cleared, graded, and graveled. The total construction and operation of the project substation and battery storage, including the battery energy storage system (BESS) containers and their inverters, would affect up to 25 acres. Three alternative BESS sites are being considered for this project. The BESS containers would either be within a substation yard or adjacent to it. The foundational pads would be crushed aggregate, concrete, or steel. The project may involve installing a 6-foot-tall fence with an additional 2 feet of barbed wire around the entire perimeter (Figure 1-1, Figure 1-2).

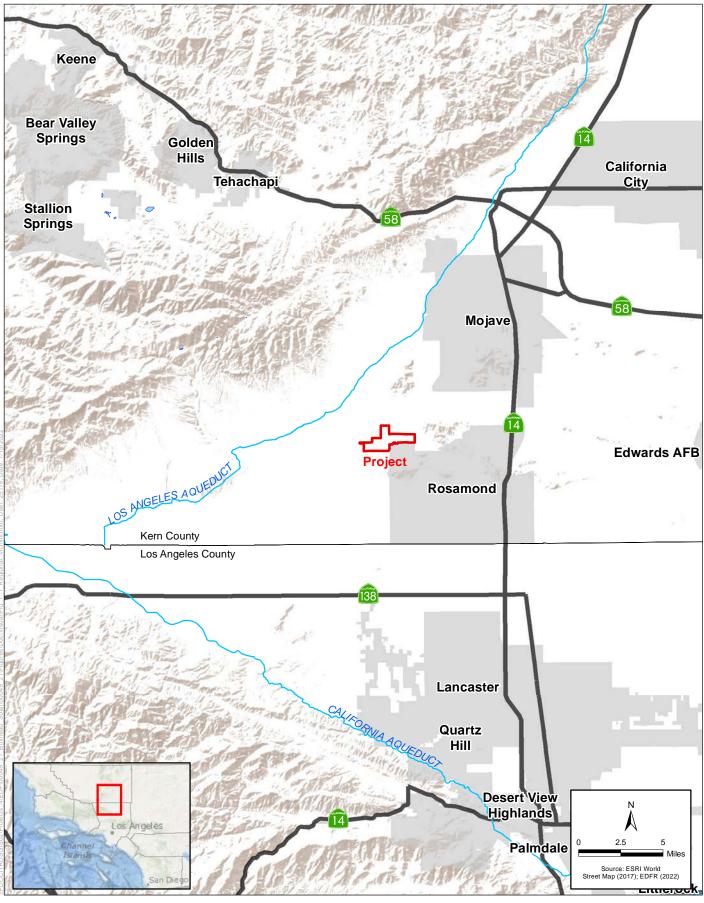




Figure 1-1 Regional Vicinity Map Bullhead Solar Project

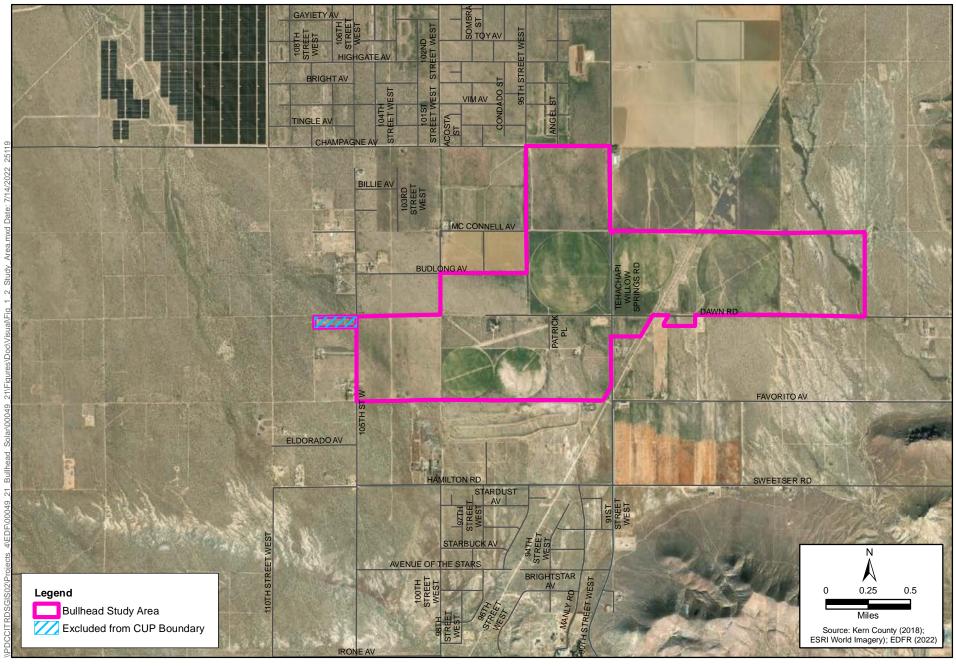




Figure 1-2 Project Study Area Bullhead Solar Project

2.1 Introduction

Visual impacts are determined by assessing changes to the visual resources and predicting viewer response to those changes. Impacts can be beneficial or detrimental. Viewer response to change in the visual environment, combined with the resource change, determines the extent of visual impacts that construction and operation of a proposed project may cause. A generalized visual impact assessment process is illustrated in Diagram 2-1.

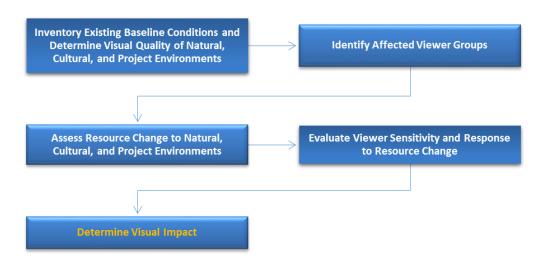


Diagram 2-1. Visual Assessment Process

2.2 Aesthetics Terminology and Methodology

2.2.1 Establish the Area of Visual Effect

The area of visual effect (AVE) is the aesthetic resources analysis area that comprises *viewsheds*, or what people can see in the landscape, which encompass the entire area in which views would be affected by a proposed project. The AVE and its viewsheds are defined by the physical constraints of the environment and the physiological limits of human sight. Physical constraints of the environment include landform, land cover, and atmospheric conditions. Landform is a major factor in determining the AVE because it can limit views or provide an elevated perspective for viewers. Similarly, land cover such as trees and buildings can limit views, whereas low-growing vegetation and the absence of structures can allow for unobscured views. Atmospheric conditions, such as smoke, dust, fog, or precipitation, can temporarily reduce visibility or be a more regular component of the visual landscape.

The physiological limits of human sight are affected by location, proximity, and light. *Location* refers to the topographic position of the viewer, such as being level with, above, or below what is being observed. *Proximity* is categorized into three distance zones: foreground (up to 0.5 mile from the viewer), middleground (0.5 mile to 3 miles from the viewer), and background (beyond 3 miles). A feature in the landscape is more dominant and has a greater importance the closer the feature is to the viewer, whereas importance is reduced the farther away the feature is. In the background, the scale and color of existing landscape elements and project features blend so that only broad forms, large-scale patterns, and muted colors are evident. *Light* also plays a large role in affecting views. For example, during the daytime, views are more readily available than at night, when darkness conceals details and color in the landscape in the absence of bright moonlight or artificial light sources. Furthermore, light level and direction change throughout the day, affecting color and individual forms. The environment's physical constraints and limits of human sight combine to establish viewsheds that range from restrictive to expansive and AVEs that range from smaller and more confined to larger and wider-reaching (FHA 2015:4-5-4-9, 6-3-6-4; Litton 1968:3-5).

Because the project site is located in a rural area where there is little development and topography to limit available views of the proposed project, for the purpose of this technical report, the majority of AVE is considered to include foreground and middleground views that are up to 3 miles from the proposed project. Background views (i.e., views beyond 3 miles from the proposed project) are considered in less depth because details become diminished beyond the middleground and because project improvement features, most often, do not stand out in background views. However, features that are present within background views may be discussed as contributing visual elements to the AVE (e.g., mountain ranges, water features) because the proposed project may affect the availability of views of notable features in the background, which may be of local or regional importance.

This technical report also considers impacts on scenic vistas and sensitive viewpoints. *Scenic vistas* often encompass wide areas with long-range views to surrounding elements in the landscape, as well as areas that are designated, identified by signage, and accessible to the public for the express purpose of viewing and sightseeing. This includes any such area designated by a federal, state, or local agency. *Sensitive viewpoints* can include scenic vistas, designated scenic highways, residential views, expansive desert views, and views from public parks, recreational areas, and culturally important locations from which the project could be visible.

2.2.2 Inventory Baseline Conditions

Visual Character of the Environmental Setting

The environmental setting comprises the natural, cultural, and project environments that constitute the AVE. For the purpose of defining aesthetic and visual resources, the *natural environment* is determined by the visual character of the land, water, vegetation, animals, and atmospheric conditions described in more detail below in Table 2-1. The *cultural environment* is determined by the visual character of buildings, infrastructure, structures, and other artifacts and art. The *project environment* focuses down from the larger context of the natural and cultural environments and concentrates directly on pre-existing development within the project site. As such, there is overlap between the natural and cultural environments and the project environment. However, the project environment is composed of visible elements immediately within a project site's boundaries and includes the existing development footprint, transportation corridor geometrics, terrain and

grading, constructed elements, vegetative cover, and other ancillary visual elements found within pre-existing development.

When a project is proposed to be located on a site that is already developed, the existing project site coherence can be evaluated to establish existing, baseline conditions and how existing features at the project site blend with the surrounding natural and cultural environments. In situations where there is no development within the proposed project site boundaries, the project would introduce new development where none presently exists. In such cases, in lieu of describing the project environment, only the natural and cultural environment are described for existing conditions.

Table 2-1. Visual Character Elements of Environmental Setting

Feature	Description of Element	Visual Attributes			
Natural Environment					
Land	Landform and natural materials (besides water and vegetation) on the land (e.g., rocks, sand, boulders).	Landscape form, spatial qualities, and the nature of its materials.			
Water	Flowing or impounded; natural or artificial.	Size of the water body, shape and spatial qualities of its perimeter, turbidity, the nature of its littoral or intertidal zones, and any other distinguishing visual attributes.			
Vegetation	Presence or absence of vegetation; native, naturalized, or cultivated.	Height and density, artistic description (i.e., form, shading, color, and texture), and any other distinguishing visual attributes; seasonal changes (i.e., flowers, fruit, and seasonal color).			
Animals	Wild or domesticated.	Domesticated farm animals in rural agricultural landscapes, wildlife as a visual indicator of a landscape's vitality and identity (e.g., whale or bird migrations, herds of large mammals, seasonal flocks of waterfowl).			
Atmospheric Conditions	Temporal changes; presence or absence of humidity, fog, and dust that reduce or alter visibility.	Predictable amounts of precipitation, either as rain or snow, can change the visibility of the landscape. Raindarkened sky and snow covering the ground may change a landscape's <i>luminosity</i> (i.e., level of brightness) and key views and distance zones. Noting the frequency, even periodicity, of such obscuring or altering phenomena adds to the description of a landscape's visual character. For example, the visual quality of the enclosing fogginess of the darker Olympic Peninsula is quite different than the open starkness of the very bright Four Corners area of the desert southwest.			

Feature	Description of Element	Visual Attributes			
Cultural Enviror	nment				
Buildings	Enclosed structures that are or have been used or occupied by people.	Buildings are often the dominant human-constructed objects in a landscape. A building's visual character is determined by its form, scale, massing, materials, and architectural style and detailing. Building orientation, patterns of light and shadow, artistic attributes (e.g., color, pattern, texture), and site-specific setting, particularly if it obstructs views, all affect visual character. The building's historic status, current and past occupants, the architect who designed the building, the client for whom it was built, and the contractor who constructed it may also be critical to the perception of the building's visual quality. Views of a proposed project from a building are also important.			
Infrastructure	Railroads, airports, harbors, roads, canals, dams, electrical and telecommunication utilities, pipelines, sewer and water systems, solar arrays, wind turbines, and other infrastructure.	A major visual attribute of infrastructure is <i>linearity</i> , because infrastructure systems can stretch for miles, even across whole states. Extended lines can affect the character of the natural and cultural landscapes. Infrastructure also provides a special set of buildings, structures, and associated artifacts that are part of an intermodal system (for moving people, goods, and services) that can affect the visual character of an AVE.			
Structures	Engineered elements that provide a social function but are not buildings or part of a larger infrastructure system.	Structures may be walls, towers, and other constructed items erected to serve a single utilitarian function. Some structures have architectural treatments, but most do not, and form and materials are dictated by functional requirements. A structure's visual character is determined by its form, scale, massing, materials, construction method, and engineering detailing. Structure orientation, patterns of light and shadow, artistic attributes (e.g., color, pattern, texture), and site-specific setting, particularly if it obstructs views, all affect visual character. The structure's historic status, the architect who designed the structure, the client for whom it was built, or the contractor who constructed it may also be critical to the perception of the structure's visual quality.			
Artifacts and Public Art	Artifacts are those items that do not fit neatly into any other category, such as cultural visual resources that are not buildings, infrastructure, or structures. Public art can also contribute to defining the visual landscape.	Artifacts and art are described in a manner similar to that recommended for buildings and structures.			
Project Environi	Project Environment				
Transportation Corridor Geometrics	A corridor's alignment, profile, and cross-section; geometrics influence what can and cannot be seen by travelers.	Geometrics are described in terms of curviness or straightness of the horizontal alignment, the slope and amplitude of its vertical profile, and the width of its surface. Documenting the existing state of these elements and how these elements will be modified by the proposed project helps establish project impacts.			

Feature	Description of Element	Visual Attributes
Grading	Existing grades associated with the project site or the grading that will be necessary to accommodate a proposed project.	Grading creates physical forms that affect the visual character and quality of a developed site by altering existing landforms. This may include the presence of existing terrain and need to create or modify slopes, areas of cuts and fills, rock cuts, and retaining wall or gabion structures. The surface appearance of rock cuts, retaining walls, and gabions also affect the project environment.
Constructed Elements	Pavement and structures are often the most typical constructed elements on a project site. Pavement includes any surface on which vehicles or people can travel. Pavement that could affect visual character and quality includes different types of paving used for road, rail bed, shoulder, parking lots, sidewalks, and trails. Structures are major, necessary built components of the project site (e.g., buildings, bridges, viaducts, and culverts, retaining walls, noise walls, and other large-scale visual elements.	Constructed elements are described in a manner similar to that recommended for the visual resources associated with cultural environment. The descriptions for constructed elements can define the setting and orientation of the structures, their form, scale, massing, and material, and aesthetic treatments (e.g., color, pattern, texture) and may also describe the interplay between light and shadow. Descriptions of constructed element can also establish the site-specific setting if it obstructs or generates views, especially for bridges. The historic status and designer of a structure may also be critical in establishing its contribution to the visual character of the project area.
Vegetative Cover	Vegetation occurs within the project site and can be formal or informal landscaping or naturalized vegetation. The vegetation may be native, introduced, or feral. It can occur in public or private spaces and along the outer edges of travel ways or within medians, interchange loops, or roundabouts. It can even be established to grow and cover constructed elements, such as noise barriers and retaining walls.	Often established for erosion control, vegetative cover can be also established to improve the aesthetics or to buffer undesirable views. <i>Vegetative cover</i> is described by identifying the density, distribution, and species composition. Aesthetic attributes of the plants, such as seasonal color, are also described. Note that vegetated rights-of-way are not present in all regions of the country, and vegetation may be minimal or even absent. However, the presence or absence of vegetation should still be described.
Ancillary Visual Elements	Generally includes lighting, utilities such as poles, towers, lines, and utility boxes/ housings, fencing, seating, trash receptacles, and traffic control devices, such as signs, rail crossing signals, and ramp metering that enhance safety and direct circulation.	Existing and proposed <i>ancillary visual elements</i> are described to establish contributing elements to the existing and proposed visual character of the project site.

Source: FHA 2015:5-1-5-5.

Affected Viewer Groups and Associated Viewer Preferences

Two overarching groups of viewers are affected by a project: neighbors and users. *Neighbors* are those people who have views *of* a project site because they are adjacent or in the vicinity to it. *Users* are those people who are within project site boundaries and have views *from* a project site. Following are the types of neighbors and users that can be affected by a project (FHA 2015:5-6–5-10).

- Residential viewers can be owners or renters that live within viewing distance of a proposed
 project or within project boundaries. Residential viewers generally have a desire to maintain the
 existing landscape as-is because how their neighborhood looks is a contributing factor for
 residents choosing to live there. Therefore, residential viewers tend to be uninterested in
 change unless they have been able to participate in defining the change.
- Recreational viewers provide or participate in active and passive recreational uses, such as
 organized sporting events, indoor and outdoor leisure activities, and cultural events.
 Recreational viewers are often focused on their recreational activity, and although they tend to
 be unsupportive of visual changes that would negatively affect the recreational setting, they
 tend to be supportive of visual improvements that enhance their recreational experience.
 Recreational services provided for visitors can be permanent, whereas the visitors are more
 transitory.
- Retail viewers include merchants that sell goods and services and the shoppers that buy them.
 Merchants generally want heightened visibility, free of competing visual intrusions, whereas
 shoppers need to be able to easily find their destination and, once there, concentrate on the
 shopping experience. Merchants tend to be more permanent than shoppers, although shoppers
 often frequent the same stores repeatedly, giving them a sense of permanence.
- Commercial viewers are those occupying or using office buildings, warehouses, and other
 commercial structures. Commercial viewers' visual preferences vary depending on the business
 and may be more aligned with retail, institutional, or industrial viewers' visual preferences than
 those of residential viewers. Workers are often permanent, whereas visitors and customers are
 transitory.
- Institutional viewers provide or receive services from such places as schools or hospitals that serve the community. Consequently, institutions often promote a public image to adjacent viewers, and the presentation of their buildings and grounds are important and tend to be well maintained. Signage or orientation and wayfinding are commonly associated with institutional facilities. Workers and employees of the institution are present for longer durations, whereas visitors are more transitory.
- Civic viewers provide or receive services from a government organization, such as a military
 reservation or a federal, state, or local agency. Views of government facilities may or may not be
 desired, depending on the particular organization and work being performed. Workers and
 employees of the government facilities are present for longer durations, whereas visitors are
 more transitory.
- *Industrial viewers* mine or harvest raw materials, manufacture goods and services, or transport goods, services, and people; they often require large amounts of land with limited exposure to the public. Industrial viewers' visual preferences are generally utilitarian, unless they want to enhance the public presentation and views of their facility. Industrial viewers tend to be primarily workers with few transitory visitors.

• *Agricultural viewers* are agricultural workers in fields and pastures who maintain crops or herd animals. Cultural order and natural harmony are critical components of the landscape. Some agricultural viewers are permanent, but many are transient, although they may return to the same area seasonally.

Travelers can include pedestrians, cyclists, motorists, and rail users who use various modes of transportation for commuting, touring, and shipping. Pedestrians use only their feet (or a wheelchair or other device), most often on a sidewalk or trail. Cyclists use bicycles at greater speeds than pedestrian travel and may use trails, traffic lanes, and sidewalks. Motorists use vehicles with engines (e.g., cars, trucks, buses, motorcycles, mopeds, or any other technology that is not self-propelled, regardless of fuel source). Motorists move at higher speeds than other groups. By necessity, the driver of a motor vehicle focuses less on the view outside the vehicle. The driver's primary interest is in project coherence, although natural harmony and cultural order also provide resources used for wayfinding. Good natural harmony and cultural order can increase driver attentiveness. Passengers within vehicles and rail cars move at high rates of speed and may be focused on views outside the vehicle or rail car or on activities within the vehicle or rail car, such talking, reading, working, eating, people-watching, or napping. Passengers prefer evidence of good natural harmony and cultural order. Commuters travel the same route regularly, have a repeated routine, and are often single drivers, but they may also be passengers, and trips can include commuting to work or to a favorite or frequent destination (e.g., campground, cabin, sports arena, relative's home). Tourists travel individually or in groups through an area for enjoyment, often with a set destination, on trips that are generally more adventurous, cover longer distances, and take more time than commuting trips. Shippers are generally single drivers moving goods on routine routes of varying distances.

Visual Quality

Evaluation Methodology

Visual quality is affected by *aesthetics*—the study of pleasing perceptual experiences as seen by humans. These perceptions are remarkably consistent within a society and across cultures, even though an individual's experience of visual quality is unique because of previous life experiences. Visual quality is a function of what the viewer wants or expects to see and what they actually do see. If people see what they want or expect to see, then the visual quality is good or high because the viewer is pleased. However, if what they see is lacking or not what is expected, then visual quality is poor or low because the viewer is disappointed. Expectations can be predictable for things like roadways and commercial development within a certain area. However, self-interest factors into visual preferences based on whether the viewer is a neighbor or user of a project site and how they may be personally benefited or affected. Different viewers and viewer groups value visual resources in different ways; therefore, there are different appraisals of visual quality. Regardless, there is a range of viewer responses inherent in all humans that aids in evaluating the overall landscape composition and vividness of both natural and cultural environments.

- *Natural harmony*: The natural environment creates a sense of natural harmony in people. The visual character of the natural environment's visual resources and viewer preferences affect the perception of natural harmony, and the viewers inherently evaluate and determine if the composition is harmonious or inharmonious.
- *Cultural order*: The cultural environment creates a sense of cultural order in people. The visual character of the cultural environment's visual resources and viewer preferences affect the

perception of order, and the viewers inherently evaluate and determine if the composition is orderly or disorderly.

- **Project coherence**: The project environment creates a sense of project coherence in people. The visual character of the project environment in combination with viewer preferences affect the perception of project coherence; viewers consciously or unconsciously evaluate the composition of the viewscape and determine if it is coherent or incoherent.
- *Visual quality*: The natural and cultural environment are elements that determine the overall visual quality for a complete visual landscape. The value placed on visual resources correlates to whether those resources meet the viewer's preferred concepts of natural harmony and cultural order. The more visual preferences and expectations are met by the landscape composition, the more that landscape is revered for its views and the more memorable, or vivid, it becomes. Visual features do not intrude but belong to a landscape of a harmonious nature in an orderly society.

Viewer preferences are established using a professional observational or public involvement approach. Professional observation is used on projects with average complexity and minimal controversy by identifying standard visual preferences associated with affected viewer groups that are adjusted to reflect state and local regulations protecting visual resources. More complex and controversial projects often engage affected stakeholders (i.e., neighbors and users) through public outreach and involvement to help define visual preferences. The analysis in this technical report uses the professional observational approach (FHA 2015:5-13–5-14).

Evaluation Rating

The analysis in Chapter 5, *Project Impacts*, uses a descriptive means for rating and assessing impacts that is based off of a numeric rating system. Numeric values are initially assigned to these descriptors that then determine the descriptive ratings. The numeric values range from 1–7 and correlate to descriptive ratings that range from Very Low (i.e., 1) to Very High (i.e., 7). This rating system allows for a better means of determining the level of impact compared to a broader rating system of, for example, five rating levels. The numeric values and associated descriptive ratings are described in more detail below. The rating forms used for the analysis are found in Appendix A.

Visual Resource Ratings

Aesthetic and visual resources are the visible components of the natural, cultural, and project environments within the AVE, as described above. Aesthetic and visual resources are assessed by evaluating the visual character and visual quality of the resources that the project environment comprises before and after construction of a proposed project and determining how these changes affect the surrounding natural and cultural environments.

- *Visual character* includes attributes such as form, line, color, and texture and is used to describe, not evaluate, the visual environment; that is, these attributes are considered neither good nor bad.
- **Visual quality** is used to describe what viewers like and dislike about the visual resources that compose a particular scene and are expressed in terms of *natural harmony*, *cultural order*, and *project site coherence*.

As described above under *Evaluation Methodology*, natural harmony, cultural order, and project site coherence are independent elements that contribute to the overall visual quality. The overall visual

quality is evaluated to determine if the composition meets or does not meet visual preferences and expectations. As previously described, to determine the overall visual quality, natural harmony, cultural order, and project site coherence are first assigned a numeric value that translates to a descriptive rating as shown in Diagram 2-2.

Diagram 2-2. Natural Harmony, Cultural Order, and Project Site Coherence Ratings

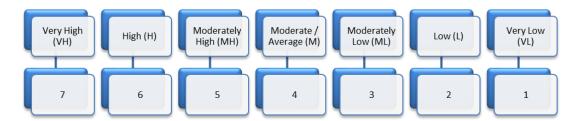


Table 2-2 provides guidance on how to rate the natural harmony, cultural order, and project site coherence. The overall visual quality is then calculated for existing and proposed conditions by averaging the natural harmony, cultural order, and project site coherence ratings as follows.

Visual Quality = Natural Harmony Rating + Cultural Order Rating + Project Site Coherence Rating 3

For situations in which there is no development within the proposed project site boundaries or no pre-existing linear infrastructure present, a project would introduce a new development or create a new transportation corridor where none presently exists. Therefore, the existing baseline conditions cannot be used to evaluate project site coherence. In such cases, in lieu of the direction provided above, the project site coherence rating is not used and only the natural and cultural environment ratings are used to calculate the overall landscape composition and vividness rating for existing conditions, as follows.

Visual Quality = Natural Harmony Rating + Cultural Order Rating 2

The overall visual quality is then assigned a descriptive rating, called a *Visual Quality Rating*, based on the numeric values as shown in Diagram 2-3.

Very High Moderately Moderate / Moderately Very Low High (H) Low (L) High (MH) Low (ML) Average (M) (VH) (VL) 6.4 to 5.5 5.4 to 4.5 4.4 to 3.5 3.4 to 2.5 2.4 to 1.5 1.4 to 1

Diagram 2-3. Visual Quality Ratings

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Table 2-2. Visual Resource Rating for Determining Visual Quality

Visual				Visual Quality			
Resource	Very High (7)	High (6)	Moderately High (5)	Moderate (4)	Moderately Low (3)	Low (2)	Very Low (1)
Natural Harmony	Landscape is pristine and untouched by human influences. Natural state is exemplary at a global level. Natural state may be very harmonious, but may also be visually distinct in that the natural landscape inspires awe.	Landscape is largely untouched by natural and human influences. Natural state is exemplary to region and vicinity. Perceived as very harmonious.	Landscape has few visible modifications, but they do not greatly detract from available views. Natural state is of higher quality than natural environments that are more common to region and vicinity. Perceived as harmonious.	Natural landscape has visible natural and human modifications. Natural state is common to region and vicinity. Perceived as fairly harmonious with some slight distractions.	Landscape has notable visible modifications that detract from available views. Natural state is of lesser quality than natural environments that are more common to region and vicinity. Perceived as disharmonious.	Very disrupted natural landscape. Natural state may be perceived as an eyesore. Perceived as very discordant.	Natural landscape is in disarray and severely degraded.
Cultural Order	Cultural landscape is exceptional and can be perceived as having exceptional design cohesion recognized at a global level. Land uses may blend seamlessly, but may also be visually distinct in that the cultural landscape inspires awe.	Cultural landscape is exemplary and can be perceived as having exemplary design cohesion compared to region and vicinity. Land uses blend seamlessly. Perceived as very orderly.	Cultural landscape is typical of the region and vicinity. Land uses blend well. Can be perceived as having superior design cohesion to ordinary or familiar cultural environment.	Cultural landscape contains orderly and familiar design elements typical of the region and vicinity. Land uses may be slightly disjointed. Can be perceived as an ordinary or familiar cultural environment.	Cultural landscape contains some unifying elements but generally lacks design cohesion. Perceived as containing highly disjointed land uses.	Cultural landscape lacks design cohesion and sense of place. May be perceived as blight.	Cultural landscape is in disarray and severely degraded.
Project Site Coherence	Project site blends with natural and cultural landscape to the degree that it cannot be noticed or can be perceived as providing an exceptional contribution to surrounding visual environments.	Project site is a part of the natural and cultural landscape and can be perceived as a beneficial, contributing visual element to surrounding environments.	Project site responds well to the natural and cultural landscape and can be perceived as being very compatible with surrounding environments.	Project site responds to the natural and cultural landscape in an adequate manner. Would require minor to moderate improvements for better compatibility with surrounding environments. Perceived as being common to the setting with some slight distractions.	Project site does not respond to the natural or cultural landscape and can be perceived as disjunctive. Would require moderate to substantial redesign to rectify compatibility with surrounding environments. Perceived as incoherent.	Project site substantially degrades the natural or cultural landscape. Would require substantial to major redesign or relocation to rectify compatibility with surrounding environments. Perceived as very incoherent.	Project site is in disarray and severely degrades the natural or cultural landscape. Would require major redesign or relocation to rectify compatibility with surrounding environments.
Visual Quality ^a	Used when Existing Project Site <u>is</u> Developed and for Proposed Project Conditions: Natural Harmony Rating + Cultural Order Rating + Project Site Coherence Rating 3			OR		when Existing Project Site <u>is Not</u> Deve l Harmony Rating + Cultural Order	•

^a The combined evaluation of visual quality and memorability of natural harmony, cultural order, and project coherence. Translate the numeric calculation to the descriptive rating.

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A Very High rating corresponds to more pristine natural environments that are untouched by humans or cultural and project environments that are extremely well designed. As such, higher visual ratings represent landscape compositions that are vivid and that may evoke feelings of awe and wonderment. A Very Low rating corresponds to highly disjunct landscapes that have been haphazardly altered by humans. As such, lower visual quality ratings correspond to landscape compositions that may evoke negative emotional responses in viewers. In general, the more a composition meets visual preferences and expectations, the more positive the viewer response. In general, the more positive the viewer response, the more memorable, or vivid, the composition becomes. For example, a more positive viewer response occurs when a development or roadway is not perceived as an intrusion, but an integrated element belonging to a harmonious and orderly landscape.

Light and Glare Ratings

Light is a function of natural and artificial illumination that is present during the day and night within the natural, cultural, and project environments. Sources of natural light include the sun, moon, stars, fire, and lightening, and sources of artificial light can include streetlights, vehicle headlights, landscape lighting, external security lighting, internal building lighting, and stadium/playing field lighting. Levels of light are influenced by the time of day, atmospheric conditions, the presence or absence of both natural and artificial lighting, and natural and built features that may filter or screen light. The visual landscape can range from being very brightly lit to being very dimly lit to being dark and not lit at all. In addition, lighting is influenced by the color temperature of the light source that can give the appearance of warmer, more orangey lighting or brighter, more bluish or whitish lighting. The height and angle of lighting and presence or absence of shielding affects whether lighting spills beyond a specific boundary, creating light trespass, or radiates upward into the night sky, creating ambient light glow that brightens the night sky.

Glare can be caused by a direct light source (i.e., direct glare) or, more commonly, by the reflection of the sun, moon, or artificial light source from a reflective surface (i.e., reflective glare). The intensity of direct glare is a function of the brightness of the surroundings and the intensity of the light source. Similarly, the intensity of reflective glare is a function of the reflectivity of the surface, the intensity of the light source, and the angle of the light source hitting the reflective surface. Highly reflective surfaces include water, glass, and metal. However, any surface may be a source of reflective glare based on its coloring and size. Lighter surfaces are more reflective than darker surfaces. For example, flat white has a reflectivity of 85–95 percent, whereas yellow has a reflectivity of 70 percent. Reflectivity decreases as the color gets darker because lighter colors reflect light and darker colors absorb light. Similarly, larger surfaces have a bigger area from which light will reflect than do smaller surfaces (Smardon 1986:126–128).

Natural and artificial light, atmospheric conditions, regional weather patterns, vegetation, terrain, water features, built structures, materials, and surface texture and color within the natural, cultural, and project environments all contribute to light and glare. Although light and glare are a part of the natural, cultural, and project environments, changes in light and glare are often assessed independently and in a qualitative manner that compares existing to proposed changes in levels of light and glare. This assessment also includes evaluating changes to shade and shadowing that can, in turn, affect levels of light and glare.

Within the AVE, light and glare levels are assessed by evaluating existing and resultant light and glare levels associated with a project site and the surrounding project vicinity. This helps determine the changes in light and glare levels, specifically, at a project site. This also helps to determine if, for example, vegetation removal or light fixture installation at a project site would result in an increase in light and glare levels on adjacent properties in the project vicinity, or, perhaps, if built structures or landscaping would introduce shade or filter project lighting and result in a decrease in light and glare levels on adjacent properties in the project vicinity. Rating light and glare levels in this manner helps to frame the impact discussion and aids in determining how the overall light and glare levels are changed within the AVE and the source and location of such changes. The levels of daytime and nighttime light and glare are rated as shown in Diagram 2-4.

Very Low (VL)

Moderately Average (M)

Moderately High (H)

Very High (VH)

1

2

3

4

5

6

7

Diagram 2-4. Daytime and Nighttime Light and Glare Level Ratings

Again, it should be emphasized that although the visual resource rating is a measurement of *quality*, the light and glare ratings are a measurement of *intensity* to assess degree of change, neither term is intended to imply judgment of positive or negative impact.

Table 2-3 provides a general guide to assessing and rating *daytime* light and glare levels. Table 2-4 provides a general guide to assessing and rating *nighttime* light and glare levels. As shown in these tables, project site and project vicinity light and glare levels are evaluated using the same parameters. Table 2-4 focuses primarily on artificial lighting levels.

In general, a project's analysis would rate existing light and glare levels for both daytime and nighttime conditions. However, proposed light and glare levels may not need to be rated when no changes are proposed that would affect either daytime or nighttime conditions. This would occur, for example, when existing nighttime lighting would not be modified, and no new lighting would be introduced as a result of a proposed project. Therefore, there would be no change between the existing and proposed conditions. In addition, the level of light and the level of glare can be rated together or independently of one another, depending on project circumstances. Independent ratings for light and glare levels may benefit more complex projects because using independent ratings would make the impact discussion and assessment easier to frame and evaluate.

Table 2-3. Daytime Light and Glare Levels^a

				Daytime Light and Glare			
Location	Very Low (1)	Low (2)	Moderately Low (3)	Moderate (4)	Moderately High (5)	High (6)	Very High (7)
Project Vicinity and Project Site ^b	Natural Environment: Very densely vegetated or heavy shading or shadowing that may result from vegetation, landforms, or natural materials that create an enclosed effect. May be typically overcast, dull, or rainy weather conditions. May be perceived as dark and muted. Details may be hard to see due to heavy shade and shadowing combined with low lighting levels and darker colored natural features. Smaller-sized water bodies may be present. Cultural Environment: Landscape has barely perceptible or no cultural elements that contribute to daytime light and glare. This may be typical of natural areas that have very limited human influence. Project Environment: Project site is not developed, or there are little to no built elements or vertical surfaces that result in reflective glare. Vegetation helps reduce glare. Regular traffic levels tend to be very low, such as along a single track rural or forest roadways.	Natural Environment: Densely vegetated and moderate to heavy shading or shadowing that may result from vegetation, landforms, or natural materials that create a canopy effect. Understories and ground planes may be dappled with sunlight in sunny conditions, or understories can be seen as greyish, foggy, or muted in overcast and rainy conditions. Details may be slightly hard to see due to heavy shade and shadowing combined with low lighting levels and darker colored natural features. Smaller-sized water bodies may be present. Cultural Environment: Landscape has very few cultural elements that contribute to daytime light and glare. This may be typical of natural areas or very low density forested or rural areas. Project Environment: Project site has few built elements and vertical surfaces that result in reflective glare. Vegetation alone helps reduce glare. Regular traffic levels tend to be low, such as along a two-lane rural roadway.	Natural Environment: Moderate to dense vegetative cover with typically bright, sunny weather conditions so that vegetation shade and shadowing helps filter sunlight, offsetting the effects of light and glare. Smaller to medium sized water bodies may be present. Or, little vegetation in a typically overcast, dull, or rainy environment where lack of sunshine offsets effects of little vegetative cover. Smaller to large-sized water bodies may be present. Cultural Environment: Landscape has few cultural elements that contribute to daytime light and glare. This may be typical of areas with low-density development, such as in rural areas. Project Environment: Project site has some built elements and vertical surfaces that result in reflective glare. Vegetation helps reduce glare. Traffic levels tend to range from low to moderately high depending on the time of day, such as along state routes and local paved roadways.	Natural Environment: Moderate mix of vegetation and open spaces that provides a balance between light and glare in a range from dull to bright environments. Smaller to medium sized water bodies may be present. Cultural Environment: Landscape is moderately developed with cultural elements that contribute to daytime light and glare. This may be typical of areas with higher density rural development or lower to medium density suburban development. Project Environment: Project site is developed with pavement and structures and horizontal and vertical surfaces are common. Surface coloring contributes to glare. Vegetation helps reduce glare. Traffic levels tend to range from moderate to high depending on the time of day, such as along local roadways that are developed or highways.	Natural Environment: More open mix of vegetation and open spaces that does not quite offset or balance the effects of light and glare in a range from dull to bright environments. Medium to larger-sized water bodies may be present. Cultural Environment: Landscape is quite developed with suburban or urban development that contribute to daytime light and glare. This may be typical of highly suburbanized areas, lowerdensity urban areas, or business, commercial, and industrial areas that have a higher ratio of impervious paving and built structures. Project Environment: Project site is well-developed with pavement and structures and horizontal and vertical surfaces are prominent. Surface coloring contributes to glare. Vegetation is sparse or absent. Regular traffic levels tend to be high, such as along highways and interstates traveling through highly populated areas.	Natural Environment: Little vegetative or landform cover with typically bright, sunny weather conditions and large bodies of water or lightly colored expanses of natural surfaces (e.g., snow cover, desert sands) other naturally reflective surfaces tend to be present. May be perceived as glaringly bright and cause visual discomfort. Details may be hard to see without protective eyewear. Cultural Environment: Landscape tends to be highly developed with urban uses with many reflective surfaces such as high-rise buildings with many windows. Project Environment: Project site is quite developed with pavement and structures and many horizontal and vertical surfaces. Surface coloring is neutral and helps to slightly reduce glare. Vegetation is likely absent. Regular traffic levels tend to be high to very high, such as along highways and interstates traveling through urbanized areas.	Natural Environment: No vegetative or landform cover, with typically bright, sunny weather conditions and large bodies of water or lightly colored expanses of natural surfaces (e.g., snow cover, desert sands); other naturally reflective surfaces tend to be present. May be perceived as glaringly bright and cause visual discomfort. Details may be hard to see without protective eyewear. Cultural Environment: Landscape tends to be very highly developed urban environments with a substantial number of reflective surfaces, such as glass-faced high-rise buildings. In such instances, levels of daytime light and glare may be highly dependent on time of day (i.e., sun angle) and viewer position in the landscape (i.e., ground level views in a city may be shaded where views from different building levels are not). Project Environment: Project site predominantly developed with pavement and structures so that horizontal and vertical surfaces are the most dominant features. Surface coloring is lighter and contributes to glare. Vegetation is generally absent. Regular traffic levels tend to be very high, such as along interstates traveling through highly urbanized areas.

^{a.} The level of light and the level of glare can be rated together or independently of one another, depending on the project's needs (refer to *Light and Glare Ratings*).

b. Project site and project vicinity light and glare levels are evaluated using the same parameters.

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^c A positive number means an increase in L&G levels. A negative number means a decrease in L&G levels. Translate the numeric calculation to the descriptive Light and Glare Rating.

Table 2-4. Nighttime Light and Glare Levels^a

/isual				Nighttime Light and Glare			
source	Very Low (1)	Low (2)	Moderately Low (3)	Moderate (4)	Moderately High (5)	High (6)	Very High (7)
Glare (L&G) Level	Natural Environment: High cloud cover or haze caused by natural conditions or atmospheric pollution. Tends to have extensive overhead cover present. Conditions allow for very low levels of nighttime lighting from the stars and moon. Colors and details cannot be seen at night. Cultural Environment: Landscape has barely perceptible or no cultural elements that contribute to nighttime light and glare because of very limited human influence. No traditional interior or exterior lighting is present. Colors and details cannot be seen at night. Project Environment: No project site lighting (typically overhead lighting). Colors and details cannot be seen without artificial lighting, such from vehicle headlights.	Natural Environment: Moderate cloud cover or haze caused by natural conditions or atmospheric pollution. Tends to have overhead cover present. Conditions allow for low levels of nighttime lighting from the stars and moon. Colors and details are very hard to see at night. Cultural Environment: Landscape has very few cultural elements that contribute to nighttime light and glare. This may be typical of natural areas or very low-density forested or rural areas. Very low levels of interior and exterior lighting is present. Colors and details are very hard to see at night. Project Environment: Very limited project site lighting, such as individual light standards at major intersections. Colors and details cannot be seen along most of the corridor without artificial lighting, such as from vehicle headlights.	Natural Environment: Slight cloud cover and haze, natural or otherwise, occurs on a regular basis. Moderate to little overhead cover. Conditions allow for some nighttime lighting from the stars and moon. Colors and details begin to become more visible at night. Cultural Environment: Very low levels of exterior lighting in developed areas, or landscape has low-density development, such as in rural areas, with limited amounts of interior and exterior nighttime lighting from buildings, vehicles, streets, etc. that provide low levels of lighting to the area and reflect off of the built environment to a small degree. Colors and details begin to become more visible at night. Project Environment: Project site lighting is more regular, yet still sparse. Colors and details are more regularly visible. Colors and details are more visible with artificial lighting, such as from vehicle headlights.	Natural Environment: Cloud cover and haze, natural or otherwise, varies. Moderate to little overhead cover. Conditions allow for moderate levels of nighttime lighting from the stars and moon. Colors and details can be seen night to varying degrees of clarity based on level of detail and brightness of colors. Cultural Environment: Moderate amounts of interior and exterior nighttime lighting, such as in higher-density rural development or lower- to medium-density development in suburban areas, from buildings vehicles, streets, etc., that provide fairly well-lit conditions that reflect off of the built environment to a small degree. Traditional outdoor lighting may be intermixed with lower lit areas and very bright lighting that causes small patches of "daytime" lighting conditions at night. Visual discomfort in close proximity to pockets of highly lit areas. Colors and details can be seen night to varying degrees of clarity based on level of detail and brightness of colors. Project Environment: Project site lighting is regular and illuminates much of the site at lower levels. Colors and details are enhanced with the addition of artificial lighting, such as from vehicle headlights.	Natural Environment: Cloud cover and haze, natural or otherwise, is rare. Sparse overhead cover. Conditions allow for nighttime lighting from the stars and moon. Colors and details are fairly visible at night. Cultural Environment: Substantial amount interior and exterior nighttime lighting, such as in suburban or urban development, from buildings, vehicles, streets, etc., to brighten the area and reflects off of the built environment. Very bright lighting begins to outweigh traditional outdoor lighting and causes small islands of "daytime" lighting conditions at night. Nighttime lighting may cause visual discomfort across portions of the area. Lighting may lack proper shielding. Colors and details are fairly visible at night. Project Environment: Project site lighting is regular, but brighter than traditional outdoor lighting and illuminates much of the site. There may be lower-lit portions of the site where artificial lighting, such as from vehicle headlights, is needed to better see colors and details.	Natural Environment: Typically, no cloud cover or haze caused by natural conditions or atmospheric pollution. Sparse overhead cover. Tends to have large water bodies or extensive snow cover present. Conditions allow for high levels of nighttime lighting from the stars and moon. Colors and details are easy to see at night. Cultural Environment: Landscape tends to be highly developed with urban uses with a substantial amount interior and exterior nighttime lighting from buildings, vehicles, streets, billboard, stadiums, etc. to illuminate the area and reflect off of the built environment. Very bright lighting is highly used and causes larger islands of "daytime" lighting conditions at night. Nighttime lighting causes visual discomfort across much of the area. Lighting may lack proper shielding. Colors and details are very easy to see at night. Project Environment: Project site is very well-lit, illuminating a great deal of the site. There may be lower-lit portions of the site where artificial lighting, such as from vehicle headlights, is needed to better see colors and details.	Natural Environment: Typically no cloud cover or haz caused by natural conditions of atmospheric pollution. No overhead cover. Tends to have large water bodies or extensive snow cover present. Condition allow for high levels of nighttime lighting from the state and moon. Colors and details a very easy to see at night. Cultural Environment: Landscape tends to be very highly developed urban environments with a great dear of interior and exterior nighttime lighting from buildings, vehicles, streets, billboard, stadiums, etc. to illuminate the area and reflect off of the built environment. Very bright lighting is prominent and causes expanse of "daytime" lighting condition at night. Nighttime lighting causes visual discomfort across a large area. Lighting may lack proper shielding. Colors and details are very similar to daytime conditions. Project Environment: Project site lighting is prominent and illuminates the majority of the site. Project site lighting is so prominent that artificial lighting such as from vehicle headlight would not even be needed during nighttime conditions.

^a The level of light and the level of glare can be rated together or independently of one another, depending on the project's needs (refer to Light and Glare Ratings). Refer to Table 2-3 for descriptions to help determine presence features that may affect nighttime glare.

b. Project site and project vicinity light and glare levels are evaluated using the same parameters.
c. A positive number means an increase in L&G levels. A negative number means a decrease in L&G levels. Translate the numeric calculation to the descriptive L&G Rating.

Unlike the ratings described previously under Visual Resource Ratings, the ratings for light and glare levels are not averaged together because doing so could skew light and glare impacts, as illustrated by an example project in Table 2-5, below. For the example project, the existing conditions for both the example project site and the project vicinity surrounding the example project site are desert lands developed in the same manner. Therefore, the existing conditions for both the project site and project vicinity would result in a Moderately High light and glare rating. In this example, the proposed project is a multilane freeway that would be well-lit and have a High light and glare rating. Light from the proposed project would increase the amount of light and glare at the project site, but shielding applied to lights would prevent light spill onto the adjacent desert lands in the project vicinity. As shown in the greyed cells for Table 2-5, averaging the ratings of the project site and project vicinity provides a generalized level of increase for the whole AVE, but does not account for the higher levels of increase that would be experienced at the project site and elevates the level of increase affecting the project vicinity. Using the recommended calculation method in Table 2-5, the analysis would reasonably conclude that light and glare would be increased at the project site, but the shielded lights would limit light spill to a small area outside of the right-of-way that would not affect the overall project vicinity.

Table 2-5. Recommended Rating Method to Calculate Changes to Nighttime Light and Glare

Light and Glare Rating	Proposed	Existing	Additive Level of Increase	Notes	
Project Site	6 (High)	5 (Moderately High)	6-5 = 1 level of increase at the project site	Recommended	
Project Vicinity	5 (Moderately High)	5 (Moderately High)	5–5 = 0 no change within the project vicinity	Calculation Method	
Averaged Level of Increase	(6+5)/2 = 5.5	(5+5)/2 = 5	5.5–5 = 0.5 level of increase within the AVE	Discouraged Calculation Method	

In this example, the level of increase provides information on describing the change in light and glare levels. However, light and glare impacts must be factored with viewer response and the type of change that would result from the proposed project. For example, a roadway project that would cut through the desert, as shown in Table 2-5, may not have many viewers who would be directly affected. However, these natural areas could be of local or regional importance, and thus introducing sources of nighttime lighting would not be viewed as favorable. Conversely, an increase in light and glare may not be considered negative, depending on the project. For example, light and glare could increase in a desert area if unsightly, blighted structures that create shade were removed. However, removing unsightly, blighted structures is likely to be viewed as favorable. Therefore, the analysis must determine the change in light and glare levels, evaluate affected viewers, viewer sensitivity, and viewer preferences, assess the proposed project actions, and determine if changes in light and glare are negligible, positive, or negative and if any mitigation is needed to reduce impacts.

In addition, when evaluating light and glare levels, atypical conditions may exist that require deviation from the guidance provided in Table 2-3 and Table 2-4. For example, a moderately developed suburban area with neutral-colored buildings and tree cover present may be considered to have Moderate levels of light and glare. However, if that same area were developed with all-white buildings (e.g., due to historical preservation or local design standards), then the level of glare might

be considered to be Moderately High because the white building surfaces are more reflective and create a higher degree of perceived glare.

2.2.3 Analyze Visual Impacts

This analysis determines visual impacts by evaluating changes to the existing visual quality and predicting viewer sensitivity to those changes. As such, visual impacts are measured by the compatibility or incompatibility of the physical changes to the environment caused by a project's scale, form, and materials, which are seen by viewers, and the extent to which viewers care about—or how sensitive viewers are to—how a project changes the environment. Visual impacts can result in beneficial, adverse, or neutral changes to the visual environment and visual quality. Viewers have an inherent understanding of what constitutes project cohesion, which aids in determining the type of impact. The degree to which a project meets the preferred concept of project cohesion determines the level of impact.

Neutral impacts reflect little change to the visual environment and visual quality, retaining the existing landscape composition and vividness. Beneficial impacts can result where visual quality is improved through the enhancement of visual resources or where visual experiences are improved through the creation of new or improved views of resources. The level of beneficial impact is determined by how much a project improves the existing landscape composition and vividness and can range from small to very substantial improvements. Adverse or negative impacts can result when visual quality is degraded through visual resource modification or by blocking or altering views in a negative manner. The level of adverse impact is determined by how much a project degrades the visual landscape and ranges from general negative changes to severe declines in the existing landscape composition and vividness (FHA 2015:6-1–6-8).

The type and level of impacts for the Bullhead Solar Project are evaluated in accordance with Appendix G of the State CEQA Guidelines (Section 5.2, *Thresholds of Significance*) so that the findings of the Technical Report can be easily translated to the project EIR.

Visual Compatibility

Project environment can be affected by the visual character of grading, constructed elements, vegetative cover, infrastructure, and other ancillary visual elements associated with a project that interact to form a composition. These elements are described in more detail in Table 2-6. These changes affect the natural and cultural environments in the study area, and viewers evaluate the project components to determine if the project's composition is compatible or incompatible with the existing visual landscape. This viewer response determines how the existing landscape composition and vividness would be affected by a proposed project.

Table 2-6. Visual Character Element of a Project Environment

Feature	Description of Element	Visual Attributes
Grading	Alteration of the existing landform, or the grading, required to accommodate the project.	The visual character of the physical forms generated by grading, such as grading of slopes, the need for cuts and fills, and the presence of rock cuts and retaining walls, all affect visual quality. The surface appearance of rock cuts and retaining walls also affects the visual character of the project area.
Constructed Elements	Buildings, infrastructure, and structures resulting from project implementation. Buildings can include homes, businesses, institutions, and so on. Infrastructure can include new roads, parking lots, sidewalks, trails, utility lines, and telecommunication towers. Structures can include bridges, viaducts, culverts, retaining walls, noise walls, and other large-scale visual elements.	The visual character of constructed elements is described in terms of their form, scale, massing, and material compared to the existing built and natural environment. The setting and orientation of the structures, interplay between light and shadow, and artistic attributes like color, pattern, and texture also affect visual character. Whether a feature obstructs or generates views is also important.
Vegetative Cover	Vegetation associated with the project, such as hydroseeding for erosion control, plantings for habitat enhancement or restoration, and landscaping for aesthetics and shade. Also, vegetative cover may be removed by project activities.	The visual character of the project's vegetative cover; its density, distribution, and species composition compared to the existing natural environment. Attributes of the plants (e.g., seasonal color) and the ecological setting are also important.
Ancillary Visual Elements	May include signage, mailboxes, benches, fencing and gates, bollards, plant containers, or other features.	Such features contribute to the project's appearance as components of the project's visual character, and existing and proposed elements are described in relation to each other.

Source: FHA 2015: 5-1-5-4.

Viewer Response

Viewers make up the population affected by a project; they are the people whose views of the landscape may be altered by the proposed project, either because the landscape itself has changed or their perception of the landscape has changed. Viewers experience the visual landscape and respond to the natural and cultural environment and the design of built features in those environments.

There are two major types of viewer groups for projects: *site neighbors* and *site users*. Each viewer group has their own particular level of viewer exposure and viewer sensitivity, resulting in distinct and predictable visual concerns for each group that help to predict their responses to visual changes.

• *Site neighbors* are people who have views *to* the project site (e.g., they can view the proposed development project). They may include residential, recreational, institutional, civic, retail, commercial, industrial, and agricultural neighbors or viewer groups.

• *Site users* are people who have views *within* the project site boundaries or *from* the project site. Site users may include residential, recreational, institutional, civic, retail, commercial, industrial, and agricultural users or viewer groups.

Viewer response is a measure or prediction of the viewer's reaction to the visual environment and has two dimensions as previously mentioned, *viewer exposure* and *viewer sensitivity*.

- *Viewer exposure* is a measure of the viewer's ability to see a particular object. Viewer exposure has three attributes: *location*, *quantity*, and *duration*. *Location* relates to the position of the viewer in relationship to the object being viewed: the closer the viewer is to the object, the more exposure. *Quantity* refers to how many people see the object: the more people who can see an object or the greater frequency an object is seen, the more exposure the object has to viewers. However, the number of viewers is relative to the total number of viewers viewing the project. *Duration* refers to how long a viewer is able to keep an object in view: the longer an object can be kept in view, the more exposure.
- Viewer sensitivity is a measure of the viewer's recognition of a particular object. It has three attributes: activity, awareness, and local values and attitudes. Activity relates to the preoccupation of viewers—are they preoccupied, thinking of something else, or are they truly engaged in observing their surroundings? The more viewers are actually observing their surroundings, the more sensitivity they will have of changes to visual resources. Awareness relates to the focus of view—the focus is wide and the view general or the focus is narrow and the view specific. The more specific the awareness, the more sensitive a viewer is to change. Local values and attitudes also affect viewer sensitivity. If the viewer group values aesthetics in general, or if a specific visual resource has been protected by local, state, or national designation, it is likely that viewers will be more sensitive to visible changes. High viewer sensitivity helps predict that viewers will have a high concern for any visual change. Movement also affects viewer sensitivity by creating dynamic viewsheds that change as the viewer moves through the landscape. Speed affects how long or short a view is based on the mode of travel, and the availability of views is affected by the surrounding terrain and vegetation and the presence or absence of built features. Visual sensitivity is modified by the type of viewer, viewer activity, and visual expectations. For example, people driving for pleasure, people engaging in recreational activities such as hiking, biking, or camping, and homeowners generally have higher visual sensitivity to views. Viewers using recreational trails and areas, scenic highways, and scenic overlooks usually pay more attention to their surroundings, seek views, and have higher regard for landscape composition. Residential viewers typically have extended viewing periods and are more concerned about and aware of changes in the views from their homes. Sensitivity tends to be lower for people driving to and from work or as part of their work because commuters and nonrecreational travelers typically have fleeting views and tend to focus on commute traffic, not on surrounding scenery (FHA 2015: 6-2-6-4; U.S. Department of Agriculture Forest Service 1995: 3-3-3-13; U.S. Soil Conservation Service 1978: 3, 9, 12).

Distance zones are based off the position of the viewer and measured from one static point. As individual viewers move, so does the point from which the foreground, middleground, and background are measured. Generally, the closer a resource is to the viewer, the more dominant it is and the greater its importance to the viewer. Distance zones are defined in typical ranges as follows (subject to location-specific visual conditions) (Litton 1968:3–5):

- *Foreground*: 0.25–0.5 mile from the viewer
- *Middleground*: Extends from the foreground zone to 3 miles from the viewer

• *Background*: Extends from the middleground zone to infinity

Table 2-7 provides descriptions for the seven levels used for determining viewer response, which is in part affected by distance zones. Evaluating visual quality and viewer response must also be based on a regional frame of reference (U.S. Soil Conservation Service 1978:3). The same visual resource appearing in different geographic areas could have a different degree of visual quality and associated viewer sensitivity in each setting. For example, a small hill may be a significant visual element on a flat landscape, but have very little significance in mountainous terrain.

Table 2-7. Viewer Response Ratings

Response Ratings	Response Descriptions				
Very Low (VL)	A very small fraction of total viewers ¹ with instantaneous (e.g., moving vehicle at higher speeds) views toward the project site. Views of the project site tend to be in the middleground or background or are highly obscured in the foreground. Negligible interest in the visual landscape.				
Low (L)	Very few of total viewers ¹ with instantaneous (e.g., moving vehicle at higher speeds) views toward the project site. Views of the project site tend to be in the middleground or background. Little interest in the visual landscape.				
Moderately Low (ML)	Few of total viewers ¹ with short (e.g., moving vehicle at lower speeds) views toward project site in the middleground or background. May include fewer viewers with instantaneous views of the project in the foreground. Limited interest in the visual landscape.				
Moderate (M)	A number of the total viewers ¹ with intermittent (e.g., visitors at parks) views toward the project site in the foreground. May include fewer viewers with shorter viewing times of the project in the foreground. May also include viewers with extended (e.g., places of businesses) or permanent (e.g., residents) viewing times of the project in the distant middleground to closer background toward areas with high community interest. General interest in the visual landscape.				
Moderately High (MH)	Many viewers ¹ with extended viewing times (e.g., places of businesses) toward project site in the foreground or middleground. May include fewer viewers with shorter viewing times toward areas with high community interest in the foreground or middleground. May also include fewer viewers with shorter viewing times toward sensitive visual resource(s) in the distant middleground to closer background. Invested interest in the visual landscape.				
High (H)	Most or all of total viewers with permanent (e.g., residents) views toward the project site in the foreground or middleground. May include fewer viewers with shorter viewing times toward sensitive visual resource(s) in the foreground or middleground. Highly invested interest in the visual landscape.				
Very High (VH)	May include a variety of viewers with permanent (e.g., residents) or intermittent (e.g., recreationists/tourists) views toward sensitive visual resource(s) of local, national, or global interest. Extremely high invested interest in the visual landscape, due to public awareness of the resource.				

¹ Relative to total number of viewers of the project.

Visual Impact Values

Introduction

Ratings are used to help determine the level of impact for changes in the existing visual character and quality). This rating system has been developed independently of, but using the methods and protocol contained in, the Federal Highway Administration's January 2015 *Guidelines for the Visual Impact Assessment of Highway Projects*. The rating system uses the following steps:

1. Determine the existing and proposed *Visual Quality* for visual resources using Table 2-2.

- 2. Assess the Visual Resource Impact.
 - a. Determine the compatibility of the project's changes.
 - b. Determine *Viewer Response Rating* for proposed project using Table 2-7.
 - c. Determine the Degree of Impact Change.

In addition, ratings are used to help determine the level of impact resulting from changes to light and glare using the following steps:

- 3. Determine the light and glare levels for existing conditions.
 - a. Determine the Daytime Light and Glare Level for existing conditions using Table 2-3.
 - b. Determine the *Nighttime Light and Glare Level* for existing conditions using Table 2-4.
- 4. Determine the light and glare levels for proposed conditions.
 - a. Determine the *Daytime Light and Glare Level* for proposed project conditions using Table 2-3.
 - b. Determine the *Nighttime Light and Glare Level* for proposed project conditions using Table 2-4.
- 5. Determine if there is a change in the Daytime Light and Glare Rating and Nighttime Light and Glare Rating.
- 6. Evaluate the *Viewer Response Rating* for the proposed project using Table 2-7 and determine if the change in light and glare levels from the proposed project actions are positive or negative.
- 7. Determine the Level of Light and Glare Impact.

Visual Simulations

Computer-generated photographic simulations were prepared by AdvanceSim to illustrate the visual character elements of the Bullhead Solar Project, the change in existing visual character, and the future visual appearance from the Key Views (KVs) with the proposed project. The KVs used in this analysis were photographed on April 17, 2021, by AdvanceSim. Table 2-8, describes the approach that was used to select these KVs. The locations of these KVs are shown in Figure 5-1 in Chapter 5, *Project Impacts*, and the corresponding photographs and simulations are provided in Figures 5-2 through 5-5 in Chapter 5, *Project Impacts*. Conducting an inventory of the visible physical changes allows an analysis of future visual conditions with the Bullhead Solar Project improvements.

Table 2-8. Key View Selection

Key View (KV)	Selection Reasoning
KV 1	KV 1 is a vantage from the Pacific Crest Trail, looking east. This vantage is located approximately 6 miles west–southwest of the project site and was selected because the trail is a nationally recognized recreational trail and a National Scenic Trail. In addition, this view represents background views of the project site and provides a vantage that can be used to analyze a scenic vista view of the proposed project that is available to recreationists using the trail.

Key View (KV)	Selection Reasoning
KV 2	KV 2 is a vantage from Rosamond Boulevard, looking north. This vantage is located 2.5 miles south of the project site and was selected because the proposed project would be visible from this heavily traveled local roadway and affect background views toward the scenic Tehachapi and Piute Mountains, Middle Butte, and Willow Springs Butte that are available to roadway travelers and recreationists using the roadway. In addition, this view is representative of the affected views for nearby rural residences located along the roadway, to the immediate east and west of KV 2. Rural residences also have background views toward the Tehachapi Mountains over the flat valley floor and the project site.
KV 3	KV 3 is a vantage from 105 th Street West, looking south. This vantage is located 0.25 mile north of the project site and was selected because it is representative of the affected views for nearby rural residences that would be in proximity to the northern side of the east and west solar panel site plan areas. This KV would also have views of the primary access route that uses Dawn Road. This vantage point includes background views to the Liebre and Sawmill Mountains over the project site. Background views are slightly obstructed in some areas because of slight terrain variations and vegetation.
KV 4	KV 4 is a vantage from Tehachapi Willow Springs Road, looking northwest. This vantage is 0.6 mile south of the project site and was selected because it is a heavily traveled local roadway that transects the site and is slightly elevated due to terrain, which allows for more expansive background views to the surrounding Tehachapi and Piute Mountains over the project site for roadway travelers and recreationists using Tehachapi Willow Springs Road. Background views are relatively unobstructed, although existing power lines and poles interfere and detract from views.

A visual simulation was prepared to depict the view from each selected KV as it would appear with the completed solar development in place and with the three BESS location options. Computer modeling and rendering techniques produced the simulated images. Existing topographic and site data provided the basis for developing an initial digital model. The simulations for the Bullhead Solar Project facilities were created using a tracking panel system and are based off of other similar designs in the project vicinity. These elements were used to overlay a three-dimensional rendering of the project improvement onto a digital image of the existing conditions. Comparison of the KV photographs with the simulations of the proposed project provided the basis for determining potential effects on views and visual quality. The visual simulation rating forms are found in Appendix A, Simulation Rating Forms.

Visual Resource Impacts

Viewers have an inherent understanding of visual quality and what constitutes natural harmony, cultural order, and project cohesion. The degree to which a project meets these preferred concepts determines the level of change in visual quality. To assess the degree and level of impacts on visual resources, a visual quality rating is applied to both existing and proposed project conditions. The degree of change from the existing (i.e., without project) visual quality to the visual quality with Bullhead Solar Project is used to determine the level, or intensity, of visual impacts described in this technical report. Intensities may range from less substantial and reflecting little change to the visual environment and visual quality, retaining the existing landscape composition and vividness, and the visual quality essentially remains the same (Proposed Visual Quality = Existing Visual Quality). Conversely, impacts may be more substantial when visual quality is degraded through generally negative changes to visual resources or by blocking or altering views in a negative manner, decreasing the visual quality (Proposed Visual Quality < Existing Visual Quality). Decreasing visual

quality by one value rating is an impact of moderate intensity, whereas decreasing visual quality by more than one value constitutes a more severe impact.

Light and Glare Impacts

Light and glare impacts are determined by assessing the change in light and glare levels, evaluating affected viewers, viewer sensitivity, and viewer preferences, factoring in the Bullhead Solar Project improvements, and determining if changes in light and glare are negligible, positive, or negative and if any mitigation is needed to reduce impacts are described in this technical report. Intensities may range from being less substantial when there is little change and light, and glare levels remain essentially the same, and result in a neutral viewer response (Proposed Light and Glare Rating = Existing Light and Glare Rating). Conversely, impacts may be more substantial when changes in light and glare levels result in degraded light and glare conditions and cause a negative viewer response by either decreasing light and glare in areas that are perceived as already having too little or adequate lighting (Proposed Light and Glare Rating < Existing Light and Glare Rating) or increasing light and glare in areas that are perceived as already having adequate or too much light or glare (Proposed Light and Glare Rating > Existing Light and Glare Rating). Substantially increasing or decreasing light and glare levels would heighten viewer response and result in more severe impacts.

3.1 Project Location

The proposed project would be located on approximately 1,359.5 ¹ acres in southern Kern County, approximately 52 miles southeast of the City of Bakersfield, 19 miles south of the City of Tehachapi, 8 miles northwest of the community of Rosamond, and 2 miles north of the community of Willow Springs. Other communities within the vicinity of the project site include Mojave in Kern County and the cities of Lancaster, Palmdale, and Neenach in Los Angeles County, which are roughly 12 miles northeast, 17 miles southeast, 24 miles southeast, and 18 miles southwest of the project, respectively. Edwards Air Force Base is approximately 22 miles east of the project site's eastern boundary. The project is also in proximity to major transportation corridors, including SR 58, approximately 12 miles to the northeast; Interstate 5, 34 miles to the west; SR 14 (Antelope Valley Freeway), 7 miles to the east; and SR 138 (West Avenue D), 9 miles to the south.

3.2 Regional Setting

The project area, which falls within the South Coast California Floristic Province, is in the Antelope Valley, which is bounded by the Tehachapi and Piute Mountains to the northwest and the Frazier, Alamo, Liebre, and Sawmill mountains to the southwest. Los Padres National Forest and Angeles National Forest are just over 14 miles southwest of the project area. Willow Springs Butte and Rosamond Hills are to the east. The project gradually slopes downward from northwest to southeast and is dominated by desert vegetation.

As described above, communities within the region include Bakersfield, Lancaster, and Palmdale. This area of the county is recognized by the National Renewable Energy Laboratory as having solar and wind resources suitable for renewable energy development. There are numerous solar and wind projects developed in the area.

The region supports rural residential, commercial, and industrial land uses in valley areas in addition to open space, and agricultural land uses. Development in the region is also influenced by landform. Steep slopes in the national forests on either side of the valley and land use restrictions in other areas limit development to flat valley lands or gently rolling terrain. The open spaces and nearby rolling-to-mountainous terrain allow views of the surrounding landscape where intervening development, terrain, and vegetation do not limit such views. However, the vertical elements associated with wind turbines, transmission lines, and expanses of solar array panels are common in the region.

¹ The portion of the project subject to the Conditional Use Permits is 1,349.5 acres; 10 acres are excluded from the CUP boundary, but are included in the Study Area boundary for purposes of environmental analysis.

3.3 Project Vicinity Setting

The proposed project would be located on mostly undeveloped rangeland and previously farmed agricultural lands, consisting of privately owned parcels. The BigBeau Solar Project is being constructed to the immediate west, with start of operations anticipated for 2022, and the Catalina Renewable Energy Project and undeveloped lands are located to the north of the project site. There are buildings, fencing, and ancillary structures and features associated with low-density rural residential and farmland development within the vicinity of the project site. The surrounding cultural environment also consists of adjacent and nearby wind farms, with wind turbines found primarily in the hilly areas west of the project site. The project vicinity is also traversed by a network of paved and unpaved roads, trails from off-road vehicles, and transmission lines. In addition, the Pacific Crest Trail, a significant recreational resource, is approximately 6 miles west-southwest of the project site and has background views of the project site. The natural environment of the project site is largely undeveloped, with little vegetative cover (e.g., Mojave creosote bush scrub, Joshua trees, rabbitbrush scrub, desert saltbush scrub, fields/pastures, ruderal habitat), as well as fallow agricultural fields.

Views for affected visual receptor groups consist largely of natural desert vegetation, dirt and paved roadways, transmission lines, solar and wind facilities, scattered rural residences, and the surrounding mountains and hills. As identified in Table 3-1 and described in Section 3.2, *Regional Setting*, rural residents, roadway travelers, and recreationists using local roadways have background views over the project site to the surrounding Tehachapi, Frazier, Alamo, Liebre, and Sawmill mountains along with background views of Willow Springs Butte and the tops of the Rosamond Hills. Low-lying vegetation and undulating terrain can allow for expansive to slightly limited views out and over the vicinity and may provide for full to partially limited views toward the mountains and hills in the background. As identified in Form 1 in Appendix A, these visual conditions contribute to an existing natural harmony that is generally moderately high because, although the project site has high natural harmony because it is largely undeveloped and in a natural state, portions of the project vicinity are developed or are being developed with solar facilities. The cultural order is moderate because land uses are common to the region and are slightly disjointed. Overall, the existing visual quality associated with the project site is moderately high.

Daytime glare is moderately high because the open desert and lack of tree cover create an environment that is expansive and bright. Nighttime light and glare in the project vicinity are moderately low (refer to Form 2b in Appendix A) because rural residences, street lighting, and vehicle headlights, all of which can contribute to nighttime lighting, are limited in the area. Nighttime levels of light and glare at the project site itself are very low (refer to Form 2b in Appendix A) because the site is primarily undeveloped and has very few light sources.

No officially designated scenic vistas or scenic vistas identified by signage and accessible to the public have been identified in the project vicinity. However, the flat terrain allows for expansive views out and over the desert landscape. Views from the surrounding hills and mountains, including the Pacific Crest Trail, also allow for viewpoints out and over the landscape. These views comprise the surrounding rolling hills and mountains, which transition to the patchwork agricultural and solar arrays on the valley's flat floor. However, many views are interrupted by several intervening wind turbines and steel lattice transmission towers, which can detract from the views. Additionally, various solar developments are in operation, under construction and or permitted and planned for development in the vicinity. As identified in Form 1 in Appendix A, the visual conditions from the

Pacific Crest Trail contribute to an existing natural harmony that is high because the project site is largely undeveloped and in a natural state, and the cultural order is moderate because of visual disruptions caused by wind turbines, transmissions lines and other existing solar developments. Overall, the existing visual quality associated with views from the Pacific Crest Trail is moderate.

3.3.1 Affected Viewer Groups

The Bullhead Solar Project AVE consists of developed and undeveloped areas. Affected viewer groups in the project area include private residential viewers, travelers on roadways, recreationists (e.g., Pacific Crest Trail users, equestrians, bicyclists, joggers), and workers at the industrial wind and solar facilities in the area. Local roadways to be used by the proposed project, residential locations within the vicinity of the proposed project, and the Pacific Crest Trail are shown on Figure 5-1 in Chapter 5, *Project Impacts*. As described in Table 3-1, higher visual sensitivity is associated with some residential viewers, who have longer-term views and a higher sense of ownership of the views, as well as recreational viewers, who tend to have higher regard for natural and built environments and heightened acuity of changes in those environments. Lower visual sensitivity is generally attributed to roadway users, who tend to be focused on driving while commuting, and workers at the wind and solar facilities in the area, who are focused on work activities. Recreational roadway travelers have slightly higher sensitivities than roadway commuters because they often take routes for their scenic qualities.

Table 3-1. Summary of Affected Viewer Groups and Associated Sensitivities for Bullhead Solar Project Improvements

Viewer		
Group	Sensitivity	Reasoning
Residential Viewers	High	Rural residents in the AVE have longer-term exposure to views that would be affected by the proposed project. Residential viewers tend to have an invested interest and sense of ownership over nearby visual resources. Residents located within the vicinity of the project site are shown in Figure 5-1.
Recreational Viewers	High	Recreational viewers using any local roadway, the Pacific Crest Trail, and any informal trails are likely to seek out natural areas and scenic views that could be affected by the proposed project for both shorter and longer durations and would have high sensitivity. This is because recreationists are more likely to value the natural environment, appreciate the visual experience, and have a strong sense of ownership over the trails and corridors they use for recreation, including the Pacific Crest Trail, which is highly valued throughout the greater region.

Viewer Group	Sensitivity	Reasoning
Road Travelers	Moderate to Moderately High	Travelers on local roadways pass areas that the proposed project would affect. Travelers use roadways in the AVE at varying speeds; normal highway and roadway speeds differ, based on the traveler's familiarity with the route and roadway conditions (e.g., rain, presence/absence of potholes, paved/unpaved lanes). Single views are typically of short duration, except on straighter stretches, where views last slightly longer. Viewers traveling the same local roadways have moderate or moderately high visual sensitivity, based on their familiarity with the route and reason for travel. To viewers who travel routes frequently, such as for commuting to work, the passing landscape becomes familiar, and their attention typically is not focused on the passing views, but on the roadway, roadway signs, and surrounding traffic. Such viewers' sensitivity will be moderate. Viewers who travel local routes for their scenic quality generally possess a higher visual sensitivity to their surroundings because they are likely to respond to the natural environment with high regard and as a holistic visual experience. Such viewers' sensitivity will be moderately high.
Industrial Viewers	Moderately Low	Viewers from industrial facilities include workers at the commercial wind and solar facilities situated throughout the study area, also identified in Figure 5-1. Workers would have semi-permanent views of areas that would be affected by the proposed project. Workers are generally focused on tasks at hand (i.e., working or maintaining facilities) and have moderately low sensitivity.

4.1 Federal

4.1.1 National Trails System Act of 1968

The National Trails System Act of 1968 established national recreation, scenic, and historic trails. National scenic trails are designated as such

to provide for maximum outdoor recreation potential and for the conservation and enjoyment of the nationally significant scenic, historic, natural, or cultural qualities of the areas through which such trails may pass. National scenic trails may be located so as to represent desert, marsh, grassland, mountain, canyon, river, forest, and other areas, as well as landforms which exhibit significant characteristics of the physiographic regions of the nation (16 United States Code § 1242).

The National Trails System Act of 1968 seeks to preserve scenic and natural qualities along trails. However, it recognizes the rights of private landowners and states that, in development and use of a trail, "full consideration shall be given to minimizing the adverse effects on the adjacent landowner or user and his operation" (NPS 2019). The National Trails System Act assigns trail management responsibility to various federal resource agencies, depending on which agency holds jurisdiction over the land where the trail is located in a given area.

The Pacific Crest National Scenic Trail, commonly known as the Pacific Crest Trail, was created under the National Trails System Act to provide outdoor recreational opportunities and conserve significant scenic, historic, natural, or cultural qualities. At its closest point, the Pacific Crest Trail is approximately 6 miles west of project site. The proposed project would be visible in background views from the trail. This segment of the Pacific Crest Trail traverses miles of wind farms and adjacent solar developments. The trail is located at a higher elevation (approximately 3,100-3,200 feet above mean sea level) than the project site (approximately 2,700-2,800 feet above mean sea level). Although the Pacific Crest Trail is outside the 2-mile impact analysis area, it is included as a sensitive receptor because of its significance as a recreational resource.

4.2 State

4.2.1 California Environmental Quality Act

The methods for evaluating impacts are intended to satisfy the state requirements of the California Environmental Quality Act (CEQA) so that the findings of the technical report can be easily translated to the project environmental impact report. In accordance with CEQA requirements, an analysis must include a description of existing physical environmental conditions in the vicinity of the project. Those conditions, in turn, "will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant" (CEQA Guidelines § 15125[a]). CEQA establishes that it is the policy of the state to take all action necessary to provide the people of

the state with "enjoyment of aesthetic, natural, scenic, and historic environmental qualities" (California Public Resources Code § 21001[b]).

4.2.2 California Scenic Highway Program

Within the project vicinity, SR 14 and SR 58 are eligible for State Scenic Highway designation (Caltrans 2019). SR 14 is approximately 12 miles east of the project site, and SR 58 is approximately 14 miles to the north. However, there is no officially designated State Scenic Highway in the vicinity of the proposed project.

4.3 Local

4.3.1 Kern County Code of Ordinances

Chapter 8.36, Section 8.36.020 of the Kern County Code of Ordinances for Noise Control establishes acceptable hours for construction and limitations pertaining to construction-related noise impacts on adjacent sensitive uses, which also reduce impacts on sensitive visual receptors since this would also limit the use of lighting and limit construction to daylight hours. Specifically, construction activities that are audible to a person with average hearing ability at a distance of 150 feet from a construction site, or on a construction site within 1,000 feet of an occupied residential dwelling, are prohibited between 9:00 p.m. and 6:00 a.m. on weekdays and 9:00 p.m. and 8:00 a.m. on weekends. However:

- The development services agency director or his designated representative may, for good cause, exempt some construction work for a limited time.
- Emergency work is exempt from this section.

As a result, Section 8.36.020 would limit nighttime construction activities near residences.

Title 19 of the Kern County Municipal Code describes permitted uses, specifies building heights, and regulates the distance between buildings within various zones of the county. The zoning ordinance consists of two primary parts: a map that delineates the boundaries of zoning districts and text that explains the purpose of the district, specifies permitted and conditional uses, and establishes development and performance standards.

The following chapters of the zoning ordinance are applicable to the proposed project:

- Chapter 19.74, Scenic Corridor Combining District: Chapter 19.74 establishes a Scenic Corridor
 Combining District. This zoning district is intended to protect areas with unique visual and scenic
 resources from intrusion related to excessive or inappropriate forms of signage by requiring
 additional review by the Kern County Planning and Natural Resources Department. The project
 site is not in a designated Scenic Corridor.
- Chapter 19.81, Dark Skies Ordinance (Outdoor Lighting): The purpose of this ordinance is to
 maintain the existing character of Kern County by requiring a minimal approach to outdoor
 lighting, recognizing that excessive illumination may create a glow that obscures the night sky
 and excessive illumination or glare may constitute a nuisance. The ordinance provides
 requirements for outdoor lighting within specified unincorporated areas of Kern County; the
 proposed project would comply with the requirements, which include:
 - All outdoor lighting fixtures which utilize one hundred (100) watts or more (based on an incandescent bulb), or emit one thousand six hundred (1,600) lumens or more per fixture,

shall be fully shielded per the definition listed in this chapter, unless the fixture is exempted by this chapter. All floodlights which utilize less than one hundred (100) watts per fixture must be at least partially shielded to reduce light spillover onto adjacent properties. Additionally, the light source (bulb) within all lighting fixtures shall be oriented downward to prevent direct uplighting.

- Lighting fixtures (such as carriage lights, under-eave lights and porch lights) that utilize less than one hundred (100) watts and emit less than one thousand six hundred (1,600) lumens per fixture and that do not project light above the horizontal plane shall not be subject to an illumination curfew.
- Security lighting fixtures that utilize one hundred (100) watts or more (or emit one thousand six hundred (1,600) lumens or more) shall be controlled by a motion-sensor device if used after 11:00 p.m., and the fixture shall only be illuminated when activated by the device. The motion sensor device shall be programmed so that the fixture remains illuminated for no more than ten (10) minutes if activated by the device. Each fixture shall conform to all other provisions of this chapter, including shielding requirements.
- All other non-exempt outdoor lighting fixtures shall be turned off between the hours of 11:00 p.m. and sunrise.
- Outdoor lighting fixtures located outside of a residential zone district (E, R-1, R-2, R-3), or located more than twenty-five (25) feet from any existing single-family residence within any other zone district shall be subject to the shielding provisions but are not subject to an illumination curfew.
- o Metal halide, mercury vapor, and quartz exterior light source types shall be prohibited in and within twenty-five (25) feet of all residential zone districts (E, R-1, R-2, and R-3).
- Outdoor light fixtures shall be kept in good working order and shall be continuously
 maintained in a manner that serves the original design intent of the system and ensures
 continued compliance with this chapter.
- All light fixtures that are mounted on a building or structure (attached lighting) and all
 lighting fixtures that are not attached (freestanding lighting) shall conform to the mounting
 height limitations as listed in Table 19.81.050.C.1 of the ordinance. Maximum fixture height
 shall be measured from the finished interior grade of the mounting area to the top point of
 the lighting fixture.
- Even fixtures shown as fully shielded must be installed and aimed properly to comply with ordinance.
- Low voltage landscape lighting such as that used to illuminate fountains, shrubbery, trees, walkways, etc., shall be permitted provided that such lighting is limited to fixtures utilizing a maximum of sixty (60) watts (or seven hundred fifty (750) lumens, whichever is or less), per fixture, the fixture is not mounted to poles or buildings, and the fixture is shielded to eliminate glare and light spillover onto adjacent properties.

4.3.2 Kern County General Plan

The project site includes land designated for the following types of uses under the Kern County General Plan (Kern County 2004): 8.1 (Intensive Agriculture [minimum 20-acre parcel size]); 8.3 (Extensive Agriculture [minimum 20-acre parcel size]); 2.5 (Flood Hazard) (environmental constraints overlay); and 4.1 (Accepted County Plan Areas) (Willow Springs Specific Plan).

The Land Use, Open Space, and Conservation Element (Kern County 2009) of the Kern County General Plan contains regulations pertaining to lighting and industrial development. Specifically, lighting must be designed so that the light is reflected away from surrounding land uses and not able to

affect or interfere with vehicular traffic, pedestrians, or uses at adjacent properties. The proposed project would comply with the policies, which include:

Section 1.10.7, *Light and Glare*, of the general provisions in the *Land Use*, *Open Space*, *and Conservation Element* includes the following policies regarding light and glare:

- **Policy 47.** Ensure that light and glare from discretionary new development projects are minimized in rural as well as urban areas.
- **Policy 48**. Encourage the use of low-glare lighting to minimize nighttime glare effects on neighboring properties.

Section 1.8, *Industrial*, of the *Land Use, Open Space, and Conservation Element* includes the following policy regarding site aesthetics:

- **Policy 6.** Encourage upgrading the visual character of existing industrial areas through the use of landscaping, screening, or buffering.
- Policy 7. Require that industrial uses provide design features such as screen walls, landscaping, increased heights or setbacks, and lighting restrictions between the boundaries of adjacent residential land use designations so as to reduce impacts on residences due to light, noise, sound, and vibration.

4.3.3 Willow Springs Specific Plan

Approximately 518 acres of the project site are within the *Willow Springs Specific Plan* area (Kern County 2008). The goals, policies, and implementation measures of the Plan address the aesthetics of new commercial, industrial, and residential construction, as well as the maintenance of existing structures, including appearance, natural landscapes, and resource protection. The portions of the *Willow Springs Specific Plan* that overlap the project site are designated as follows: 4.4 (Comprehensive Planning Area), 5.3 (Residential – 10 Dwelling Units per Net Acre Maximum), 5.6 (Minimum 2.5 Gross Acres per Dwelling Units), and 6.2 (General Commercial/Comprehensive Plan Area). However, it should be noted that the project includes a proposed zone change for portions of the site from Estate Residential to Agriculture, in which case these policies would not apply. Therefore, the following policies and Kern County mitigation/implementation measures related to these existing designations pertain to visual resources:

- **Resource Mitigation/Implementation Measure 16**. A Joshua Tree Preservation and Transportation Plan shall be developed by the applicants for each parcel where Joshua trees are located on site. The plan shall be submitted to the Kern County Agricultural Commissioner's Office for review and approval prior to grading permit issuance.
- **Resource Mitigation/Implementation Measure 17**. Initial development within the Willow Springs Specific Plan Update area shall, when possible, be directed towards previously impacted areas (i.e., agricultural fields). Portions of the plan area with native vegetation, especially along the northern and western borders, shall be developed in the later phases of project buildout.

5.1 Introduction

As described in Chapter 2, *Methodology*, aesthetic resources are objects (e.g., artificial and natural, moving and stationary) and features (e.g., landforms, water bodies) visible in a landscape. These resources add to or detract from the scenic quality of the landscape (i.e., the visual appeal of the landscape). A *visual impact* is an intrusion or perceptible level of contrast that affects the scenic quality of a viewscape. A visual impact can be perceived by an individual or group as either positive or negative, depending on a variety of factors and conditions (e.g., personal experience, time of day, weather, seasonal conditions).

Identifying a study area's aesthetic resources and conditions involves understanding the visual character of the area's visual features and the regulatory context. Once those parameters are understood, a study area's aesthetic resources are defined by establishing the AVE and documenting the visual character of the environmental setting, including the natural and cultural environments. For the purposes of this section's analysis, "study area" and "AVE" are synonymous. The affected viewers are defined by their relationship to the study area, their visual preferences, and their sensitivity to changes associated with the project improvements. Visual preferences, or what viewers like and dislike about the AVE's visual character, define the AVE's visual quality. Visual quality serves as the baseline for determining the degree of visual impact and whether a project's visual impacts would be adverse, beneficial, or neutral.

The impact assessment methodology for aesthetic resources includes the following components:

- Establish the AVE for aesthetics resources.
- Inventory and describe the affected environment, affected viewers, and existing visual quality and identify key views for visual assessment.
- Assess visual compatibility and viewer sensitivity and analyze the project's visual impacts.
- Propose methods to mitigate substantial visual impacts.

The AVE and affected environment were addressed in Chapters 2 and 3. The assessment of visual compatibility and viewer sensitivity, along with proposed mitigation as applicable, are addressed in this chapter.

The methods for evaluating impacts include data collection, an inventory of regional and local conditions, evaluation of analytical context, and qualitative or quantitative data analysis techniques to determine how activities and physical changes associated with the Bullhead Solar Project could cause impacts. The techniques consider the context and intensity of the impacts.

5.2 Thresholds of Significance

CEQA Guidelines Appendix G (14 California Code of Regulations § 15000 et seq.) identifies criteria to be considered in determining whether a project would have significant impacts on aesthetic resources

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and visual quality. An impact would be considered significant if construction or operation of the project would have any of the following consequences:

- Have a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway.
- In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. If the project is in an urbanized area, the project would conflict with applicable zoning and other regulations governing scenic quality.
- Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.

5.3 Impact Analysis

Visual simulations were prepared to illustrate the visual character of elements of the Bullhead Solar Project. Table 2-8, *Key View Selection*, details the reasoning for the selection of each key view. The locations for the simulated key views are identified in Figure 5-1, *Key View Location Map*. The corresponding photographs and simulations are provided in Figure 5-2 through Figure 5-5.

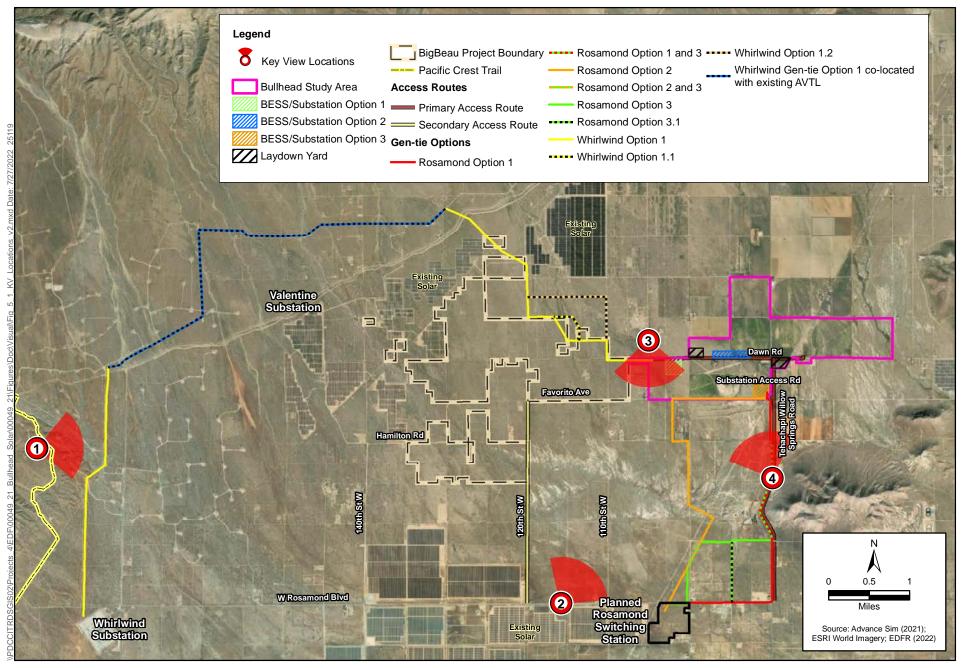
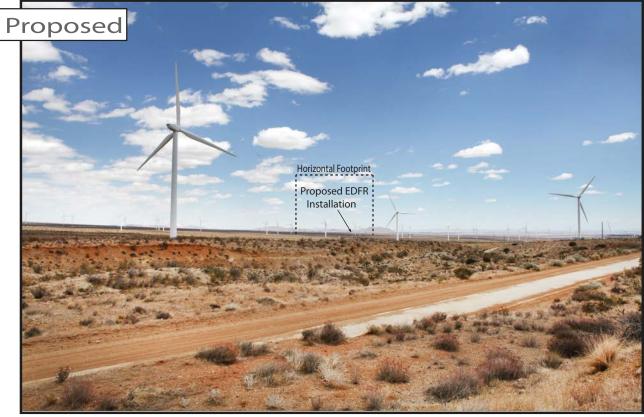




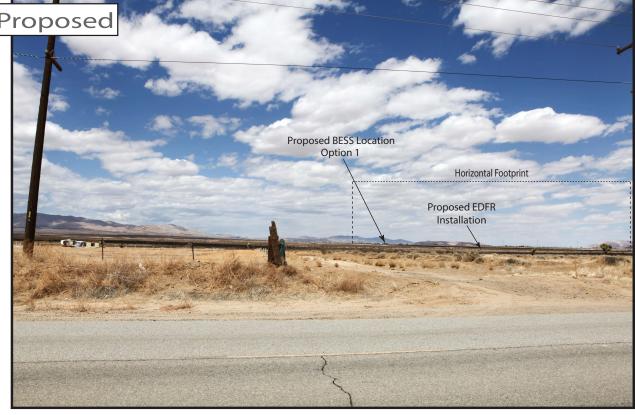
Figure 5-1 Key View Location Map Bullhead Solar Project







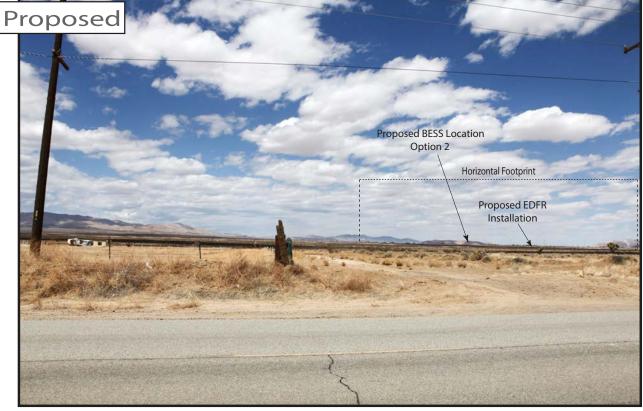






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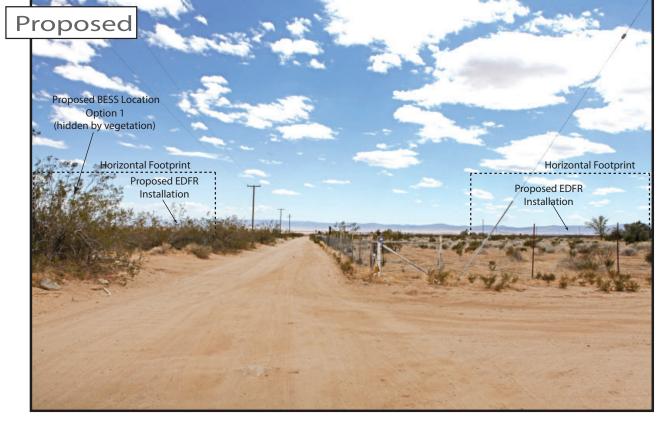
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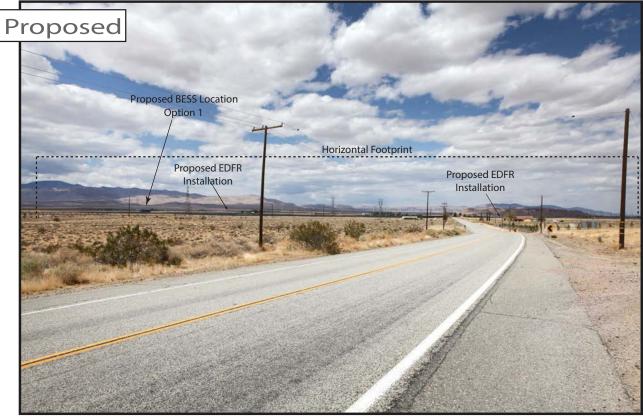








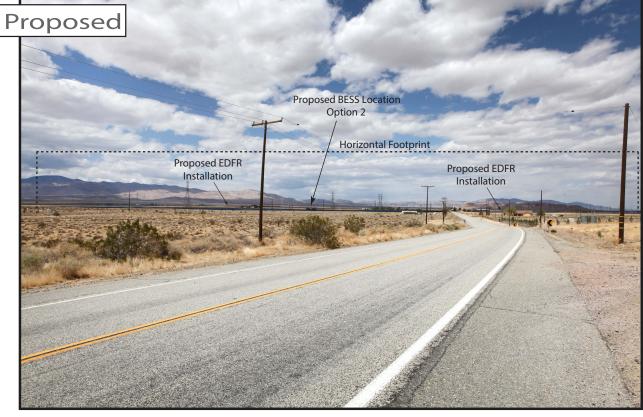




Source: AdvanceSim (2022)



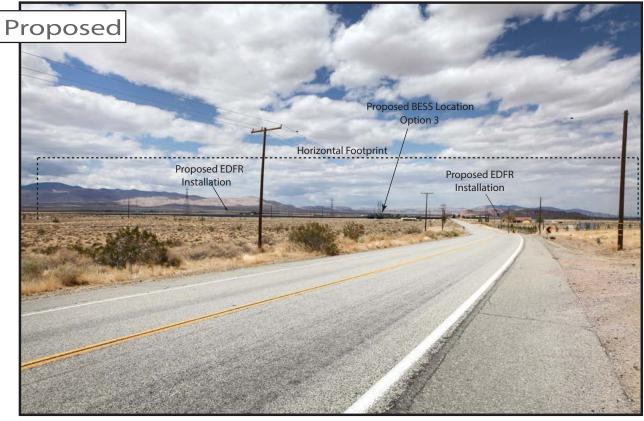




Source: AdvanceSim (2022)







Source: AdvanceSim (2022)



Impact Statement VIS-1 - Have a substantial adverse effect on a scenic vista?

As described under Section 3.3, *Project Vicinity Setting*, there are no officially designated scenic vistas or scenic vistas identified by signage and accessible to the public that have been identified in the project vicinity. Therefore, such resources would not be affected by the proposed project during construction and operation.

Impact Statement VIS-2 – Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway?

As discussed in Chapter 3, *Regulatory Setting*, there are no federal, state, or locally designated scenic highways in the project area. Therefore, such resources would not be affected by the proposed project during construction and operation.

Impact Statement VIS-3 – In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The proposed project would be located in a rural area. Therefore, the project would not conflict with applicable zoning and other regulations governing scenic quality in an urbanized area. Because the proposed project is located within a non-urbanized area, the analysis below will focus on whether implementation of the project substantially would degrade the existing visual character or quality of public views of the site and its surroundings.

Construction

Construction of the project would create temporary changes in views of the project site, and construction activities would introduce a considerable amount of heavy equipment, including backhoes, compactors, tractors, and trucks, into the viewshed of all viewer groups. Construction would be expected to take place between 6:00 a.m. and 6:00 p.m. over a period of up to 18 months and require the following temporary facilities on the site: assembly areas; parking areas; and staging and laydown areas. Dust control practices would be implemented during construction to reduce the potential for slow-moving dust clouds, which could attract attention from visual receptors and reduce the availability of short-range views. It is anticipated that the construction traffic would use Rosamond Boulevard, Tehachapi Willow Springs Road, and 120th Street West as points of ingress/egress to the property and that, once on site, they would access various sections via the existing and improved network of dirt roads. Construction traffic utilizing these roads and or access points off of Dawn Road or Favorito Avenue would be visible in the foreground and middleground from adjacent residences, as well as from local roadways. In addition, staging and laydown areas would also be visible as temporary fixed features in the foreground and middleground from adjacent residences and local roadways. The project would require minimal grading, but would restore the temporarily disturbed areas to ensure that vegetative communities would recolonize.

Viewers are accustomed to seeing heavy machinery associated with the construction of other solar facilities in the area. In addition, construction would not take place over an extended period of time, and visual changes resulting from construction would be considered short term and temporary.

Operation

The project would introduce solar fields (i.e., arrays) to much of the project site. Battery containers, collection and transmission lines, the substation, the communication/microwave tower, dirt or gravel access roads, and a 6-foot-high chain-link perimeter fence with 2 feet of barbed wire at the top would be visible in the foreground and middleground views available to residents, workers at nearby facilities, travelers on surrounding roadways, and recreationists on the Pacific Crest Trail. Depending on final siting and design, the BESS facility and substation would be located at one of three optional sites. The BESS and substation would cover up to 25 acres.

The proposed project would introduce additional structures (e.g., BESS, substation, equipment shelter), utilities and infrastructure, and industrial-looking elements into the landscape that could be visible if viewers are located in proximity to these features and if terrain, vegetation, and the proposed solar modules do not obscure views of these features. The internal dirt roads and any widening and improvements to 120^{th} Street West (secondary access route) would be constructed in accordance with Kern County improvement standards, would be consistent with existing roadways in the area, and would not greatly alter the visual landscape. Chain-link fence around the BESS/substation site would be 6 feet tall, with 2 feet of barbed wire at the top. Equipment at the project substation would include transformers, buswork, switches, and breakers; all associated equipment would be required to comply with regulations regarding utility-grade interconnection services. These features could introduce industrial-looking elements into the landscape that could be visible to sensitive viewers if viewers are located in proximity to these features, and if terrain, vegetation, and the proposed solar modules do not obscure views of these features. In addition, the preferred gen-tie option would introduce utility poles and lines that would connect the project to either the Rosamond or Whirlwind substations.

A gen-tie line would be required to relay the solar energy from the project substation to either the Rosamond or Whirlwind substations. The proposed project includes four gen-tie options and three deviation routes, shown in Figure 5-1. The gen-tie transmission poles would accommodate the underground feeder splice lines to the overhead lines and would range in height but be no taller than 160 feet. At least some portion of each gen-tie optional route is located within 0.25-mile of a residential visual receptor. Therefore, these features would introduce additional utilities into the landscape, and they are likely to be visible when seen from the nearest residence due to the short distance. However, the lines would be placed on wooden, nonreflective metal, or spun concrete poles that would be visually similar to existing utility poles common in the study area and would blend with existing utility lines associated with Valentine Solar, Catalina Solar 2, and Catalina Solar 1.

In addition to the gen-tie poles, the proposed microwave/communication tower would introduce a new vertical element (up to 90 feet high) into the landscape that would most likely be located next to the substation. Although the microwave/communication tower and substation are not depicted in the simulations, the tower and substation would likely blend in with the utility poles or towers associated with the preferred gen-tie option and other utility infrastructure in the area, resulting in the same type of impact discussed for the gen-tie options. In addition, the 10-foot-high equipment shelter would not be taller than the surrounding substation equipment, and its coloring would be consistent with the proposed substation. Therefore, the equipment shelter would blend with this proposed development and would not appear out of context.

Solar modules would be made up of individual panels that would use tracker technology. Each module would be up to 15 feet tall and have 2 feet of clearance between the bottom and the ground. As shown in the simulation for Key View 1 (Figure 5-2), the solar facility would be somewhat evident within background views from the Pacific Crest Trail. The solar array appears to be a dark-gray color variation that drapes over the terrain behind the wind turbines visible in the foreground and middleground. The proposed solar array field slightly contrasts against the browns, beiges, and tans of the existing terrain. The array field has an appearance similar to the shadowing from the clouds over the ground or appears to be a visual continuation of other nearby solar arrays. The various gen-tie line options would not be noticeable in views available from this vantage due to distance. Buildings, fencing, access roads, and electrical generation infrastructure are not visible from this distance. As seen in Figure 5-2, the BESS would not be identifiable in the views from this distance, regardless of location. In addition, the microwave/communication tower and substation would not stand out from this distance. These features may be visible, however, from locations where the project site is within the middleground of views from Willow Springs Butte as described for other key views below. As shown in Form 1 in Appendix A, the natural harmony of Key View 1 would be reduced slightly, but would remain moderately high because the proposed project does not stand out greatly in the landscape compared to existing conditions. The cultural order would not be notably affected by the additional visual intrusion created by the solar facility in a viewshed, and it would remain moderate because it would blend with other solar arrays nearby and would be located in an area where wind turbines already dominate the natural landscape. Although there would be a slight reduction in visual quality, the overall visual quality of Key View 1 would remain moderate.

As shown in the simulation for Key View 2 (Figure 5-3a through 5-3c), the solar facility would be visible in the distance. The facility would appear as a large, dark-gray to almost black band that would follow the terrain, replacing the tan soil and orange-brown color of the desert vegetation. As seen in Figures 5-3a through 5-3c (representing views with BESS sites 1-3), the BESS would not stand out in the views or be discernable, regardless of location, and would blend in with the surrounding solar panels from a distance. The various gen-tie line options would not be discernable to viewers from this key view, due to distance. As shown in Form 1 in Appendix A, the proposed project would slightly reduce the natural harmony of Key View 2 but would remain moderately high because the low-profile design would not disrupt views toward the mountains and hills beyond. Similarly, cultural order would be slightly reduced by the additional visual intrusion of the solar facility but would remain moderate because of the facility's low-profile design. However, the project site is currently undeveloped; therefore, the proposed project would be slightly incoherent relative to existing conditions because it would convert a site that is in a mostly natural condition or fallow agricultural lands to an industrial solar-production site. These slight reductions in natural harmony, cultural order, and site coherence would reduce the overall visual quality of Key View 2 from moderately high to moderate.

The project would use single-axis tracking panels and would be arranged in parallel rows that would run north–south across the site, with the tracking panels facing eastward or westward, depending on the time of day. This would appear as a large massing of repetitive lines draped across the landscape, which would be created by the lower-lying form and layout of the panels that would follow the site's topography. Tracking panels were simulated in this analysis. As shown in the simulation for Key View 3 (Figure 5-4) at Dawn Road and 105th Street West, the terrain of the project site is mostly flat, but has some gentle undulations that would aid in obscuring the lower portions of the arrays. Low-growing vegetation works with the gentle undulations in the

terrain to obscure large portions of the arrays so that the upper portions of the facility and the gray chain-link fencing do not stand out in the view. The square solar panels would appear in dark-gray to almost black rows that would follow the terrain and would be seen rising slightly above the natural, irregular texture of the orange-brown, tan, and gray desert vegetation. In addition, the narrow, lightly colored support posts would be partially to more fully visible if there are low spots or gaps in vegetation, such as down roadway corridors. As a result of the site conditions and panel orientation, the rows of panels would be more visible when looking from vantage points northwest, north, northeast, southeast, south, or southeast of the project site, where views of the parallel rows would be more apparent, and a greater number of panels would be visible. In addition, although the project would have a low-profile design, and the arrays do not obscure views of the mountains and views from this key view, the arrays would likely be tall enough to obscure views toward the lower portions of the mountains and hills from other vantages in the study area, especially in close proximity to the arrays. The various gen-tie line options, microwave/communication tower, and substation would likely be visible to viewers from this key view. In particular, Whirlwind Gen-tie Option 1 would be most visible from Key View 3 because it would be located approximately 0.3 mile to the south, where it would travel along Dawn Road to BESS Option 1. Regardless of the option, the gen-tie lines would blend with other transmission corridors in the project vicinity and would not result in a notable change in views from this vantage. The upper portions of the microwave/communication tower and substation may be visible over the vegetation in the foreground, but are not likely to stand out from this distance due to the intervening vegetation and presence of utility poles in the landscape. In addition, as seen in Figure 5-4, even though BESS Option 1 is located within this viewshed, the BESS would not stand out in this key view or be discernable because the BESS would be hidden by vegetation in the foreground and the solar panels that surround the BESS. However, BESS Options 2 and 3 would not be located within the viewshed of Key View 3, nor be visible in this key view. As shown in Form 1 in Appendix A, although the project would have a low-profile design, the natural harmony of Key View 3 would be slightly reduced from moderately high to moderate because the arrays would convert existing rangeland seen to the west, which is to the right in the simulation. However, the low-profile design would not disrupt views toward the mountains and hills beyond. Similarly, although the facility's low-profile design would not dominate the viewshed, the cultural order would be slightly reduced from moderately high to moderate by the additional visual intrusion of the solar facility and gen-tie line. However, the project site is mostly undeveloped fallow agricultural lands and desert habitat; therefore, the proposed project would be slightly inconsistent relative to existing conditions because it would convert a site that is in a mostly natural condition to an industrial solarproduction site. These reductions in natural harmony, cultural order, and project site coherence would reduce the overall visual quality of Key View 3 from moderately high to moderate.

As shown in the simulation for Key View 4 (Figure 5-5a through 5-5c), the solar facility would be visible in the distance. The facility would appear as a large, dark-gray to almost black band that would follow the terrain, replacing the tan soil and orange-brown and dark green color of the desert vegetation. As seen in Figures 5-5a through 5-5c, although BESS Option 1 (Figure 5-5a) and BESS Option 2 (Figure 5-5b) would be slightly visible and BESS Option 3 (Figure 5-5c) would be a little more prominent than BESS Options 1 and 2, the BESS would not stand out notably in this key view. However, they would be more noticeable from the roadway in closer proximity to these proposed features. The various gen-tie line options microwave/communication tower, and substation would likely be visible to viewers from this key view. In particular, Rosamond Gen-tie Options 1 and 3 would be most visible from Key View 4 because it would be located on an existing transmission line that is east, and within 10 feet, of Tehachapi Willow Springs Road before it

crosses over the roadway and travels 60-85 feet west of the edge of the southbound travel lane. Regardless of option, the gen-tie lines would blend with other transmission corridors in the project vicinity and would not result in a notable change in views from this vantage. The upper portions of the microwave/communication tower and substation may be visible over the top of the BESS facilities, but are not likely to stand out from this distance due to the amount of existing utility infrastructure in the landscape, including lattice steel and wooden utility poles and wind turbines. As shown in Form 1 in Appendix A, the proposed project would reduce the natural harmony of Key View 4 from moderately high to moderate, because even though the low-profile design would not disrupt views toward the mountains and hills beyond, the arrays would convert existing rangeland. Similarly, the additional visual intrusion of the solar facility would slightly reduce cultural order, but would remain moderate because of the facility's low-profile design. However, the project site is mostly undeveloped fallow agricultural lands and desert habitat; therefore, the proposed project would be slightly incoherent relative to existing conditions because it would convert a site that is in a mostly natural condition to an industrial solar-production site. These slight reductions in natural harmony, cultural order, and site coherence would result in a slight reduction in visual quality, but the overall visual quality of Key View 4 would remain moderate.

Although the BESS facility, substation, and microwave tower would not be very noticeable to viewers at the locations of the simulated key views, they may be more visible from local roadways and residences closer to these facilities. In addition, the light-gray chain-link fence would detract from views and create a perceived visual barrier. If not properly designed, these features would create visual intrusions in the landscape and detract from views.

Operation of a solar power generation and BESS facility of this size would introduce new infrastructure and other anthropogenic features, alter the existing visual character of the landscape from one that is rural to more industrial in nature, be seen by viewers of high, moderately high, and moderate sensitivity, and reduce existing scenic quality through the intrusion of humanmade elements on land that is currently largely undeveloped. Native vegetation would be left in place around the proposed project area where feasible, allowing for a natural screening of project components, and the proposed project would incorporate a 100-foot building setback for the solar array field, and from other project features from the project property lines in areas directly adjacent to residential parcels. However, recommended Mitigation Measures VIS-1 through VIS-3, below, would help further reduce visual impacts associated with the proposed project by limiting native vegetation removal, seeding temporarily disturbed areas with native plant species, providing privacy fencing, reducing the visibility of project features, and ensuring that the site is kept free of debris and trash.

A decommissioning plan would ensure that project facilities would be decommissioned and removed and the site allowed to return to preconstruction conditions to support, at a minimum, uses that would be consistent with preconstruction uses.

Mitigation Measure VIS-1: Reduce Vegetation Removal

Wherever possible, native vegetation (i.e., vegetation that is not invasive or a weed species) will remain undisturbed within the proposed project boundary, in compliance with fire department safety standards. All native vegetation outside of the proposed project boundary will remain in place.

Mitigation Measure VIS-2: Apply Design Treatments to Improve Project Aesthetics

The project proponent will incorporate the following design measures to improve visual conditions associated with the project site:

- The project proponent will design structures that minimize impacts on existing visual character and quality from the introduction of industrial structures. Proposed onsite structures will use earth-toned, nonreflective materials, as approved by the Kern County Planning and Natural Resources Department. The project proponent will ensure that project facilities are constructed with low-sheen and nonreflective surface materials to reduce the potential for glare.
- The project proponent will install fence slats or similar view-screening materials as approved by the Kern County Planning and Natural Resources Department in all onsite perimeter fencing adjacent to parcels zoned for residential use (Estate Residential zoning), unless equivalent screening is achieved through maintaining a vegetation buffer; the adjacent property is owned by the project proponent (to be verified by the Kern County Planning and Natural Resources Department); or a public or private entity that has submitted correspondence to the Planning and Natural Resources Department requesting this requirement be waived. Should the project proponent sell the adjacent property, slat fencing or similar view-screening materials will be installed prior to the sale unless waived by the buyer of the property.
- Prior to the commencement of operations, the project proponent must submit a landscape revegetation and restoration plan for the project site. If topsoil has been removed, reseeding will be required to establish ground cover in temporarily disturbed areas. Ground cover seeding will include native seed mix and be spread on the site as needed to establish revegetation. Seed mix will be determined through consultation with local experts and approved by the Kern County Planning and Natural Resources Department prior to planting. The plan must include the approved native seed mix, a timeline for seeding the site, percentage of the site to be covered, and prohibition on the use of rodenticides. Ground cover must be continuously maintained on the project site by the project proponent. The revegetation and restoration of the site will be monitored annually for a 3-year period, with an annual evaluation report submitted to the Kern County Planning and Natural Resources Department for the 3-year period. The 3-year monitoring program is intended to ensure the site naturally achieves native plant diversity, as similar as possible to the site conditions prior to implementation of the project.

Mitigation Measure VIS-3: Keep the Project Site Free of Debris during Construction and Operation

Prior to any grading activities, the project applicant will submit a Trash Abatement/Pest Management Program to the Kern County Planning and Natural Resources Department for review and approval. The program will include, but not limited to the following:

- The project applicant/operator will clear debris from the project area at least twice per year once the project is operational.
- Trash and food items will be contained in closed containers to be locked at the end of the
 day and removed at least once per week to reduce the attractiveness to opportunistic
 predators such as common ravens, coyotes, and feral dogs.

• The project applicant/operator will erect signs with contact information for the project applicant/operator's maintenance staff at regular intervals along the site boundary, as required by the Kern County Planning and Natural Resources Department. Maintenance staff will respond within 2 weeks to resident requests for additional cleanup of debris.

- Construction trash removal, including a recycling program, will take place once a month during construction. Receptacles will include provisions for implementing a locking system to prevent pest/rodent access to food waste receptacles.
- The project operator will implement a regular trash-removal on an ongoing basis during operation of the project.

Impact Statement VIS-4 – Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

Construction

Construction activities would take place during daylight hours, Monday through Friday, between 6:00 a.m. and 6:00 p.m. In addition, as described the regulatory information in Section 4.3.1, *Kern County Code of Ordinances*, the *Regulatory Setting*, Section 8.36.020 of the Ordinance establishes that construction is prohibited near sensitive receptors, including residences, between 9:00 p.m. and 6:00 a.m. on weekdays and 9:00 p.m. and 8:00 a.m. on weekends. This would ensure that temporary construction activities would not result in negative visual impacts associated with light and glare and the use of high-intensity construction lighting for long periods of time, which could disturb residents.

Operation

The potential for daytime glare due to solar reflection off the project's PV solar system would be low because of the materials used in construction. By design, PV cells capture and absorb much of the sunlight; however, glare that is comparable to that coming off of flat water can still result (Riley and Olson 2011). In addition, although solar panels direct most of the residual reflection skyward, residual reflection can still occur in a manner that results in fugitive glare that would result in some impacts (FAA 2018). As shown in Form 2a in Appendix A, daytime light and glare levels would be expected to be consistent with existing conditions and remain moderately high because of the open nature of the landscape and few shade sources. Mitigation Measure VIS-2, above, would serve the dual purpose of ensuring that nonreflective building materials are used for onsite buildings. Mitigation Measure VIS-4 would ensure that the latest technologies to reduce panel glare are considered for on-site.

The project site is currently gently sloping rangeland and nearly devoid of lighting sources (e.g., buildings, streetlights) at exterior or interior locations; a few sources remain associated with past agricultural operations and onsite residence. Very minor sources of light are present at adjacent residences or the adjacent BigBeau Solar Project, to the west.

The solar facility would require onsite nighttime lighting for safety and security. The level and intensity of the lighting would be the minimum needed. Exterior lights would be hooded and the lights directed onsite so that light or glare would be minimized. Switched lighting that can be turned on and off would be provided in areas where continuous lighting is not required for normal operation, safety, or security. In addition, maintenance associated with the solar facility generally would occur during

daylight hours. However, emergency maintenance or repairs could occur at night, if required. Therefore, lighting at the site is expected to be minimal. Exterior lighting associated with the onsite substation could negatively affect sensitive receptors if not properly designed. However, the proposed project would be required to comply with Kern County's Dark Skies Ordinance, described in Section 4.3.1, *Kern County Code of Ordinances*, of this technical report, which would require that all onsite lighting be properly designed and shielded so that sensitive residential viewers and nighttime skies are not impacted by project lighting. This would ensure that the project would not result in a substantial source of nighttime light and glare that would negatively affect nighttime views in the area. As shown in Form 2b in Appendix A, nighttime light and glare levels are expected to increase slightly at the project site compared with the existing undeveloped conditions. However, nighttime light and glare levels in the project vicinity would not be affected.

Mitigation Measure VIS-4: Reduce the Potential for Panel Glare

Solar panels and hardware will be designed to minimize glare and spectral highlighting. To the extent feasible, emerging technologies will be utilized that introduce diffusion coatings and nanotechnological innovations that will effectively reduce the refractive index of the solar cells and protective glass. These technological advancements are intended to make the solar panels more efficient at converting incident sunlight into electrical power, but have the tertiary effect of reducing the amount of light that escapes into the atmosphere in the form of reflected light, which would be the potential source of glare and spectral highlighting.

Impact Statement VIS-5 - Result in cumulative visual impacts?

The proposed project would be in an area that is planned for a significant amount of energygeneration development. Currently, two other solar facilities (BigBeau Solar and Raceway Solar) and the Gem Energy Storage Center project are within a 6-mile cumulative-project radius that will be complete and in operation by the time the proposed project is under construction and one recently approved renewable energy project (Rosamond Solar Modification) within the 6-mile radius that would likely be under construction at the same time as the proposed project. Refer to Appendix B for the cumulative projects list and map. These projects have the potential to result in cumulative visual impacts when considered together with the proposed project. Unobstructed views of regional topographical features and undeveloped lands would be less available as acreage is developed with various projects, including solar projects that would contain PV panels and new transmission lines. Solar projects have and would convert natural areas of vegetated desert to linear rows of industriallooking, darkly colored solar panels. Solar projects from the past, present, and readably foreseeable future would slowly convert the western Antelope Valley into a vast patchwork of solar arrays that would alter the scenic views available from the Pacific Crest Trail. One approved housing project (Investment Concepts Apartment Complex) would be built among existing development, which would blend with existing development surrounding the site, and would not stand out or result in a cumulative contribution to visual impacts in the landscape. In addition, if funding becomes available, then the California High-Speed Rail (HSR) Bakersfield to Palmdale Section could cross through the project site and be constructed after the project is built and in operation. The HSR would consist of electrically powered, high-speed trains operating at up to 220 miles per hour on surface tracks and fully grade-separated tracks at identified crossings. This project has the potential to result in cumulative visual impacts when considered together with the proposed project. Although passing trains would be visible, very briefly, the surface tracks would not be very noticeable in the landscape. However, grade-separated crossings would increase the amount of roadway

infrastructure within the cumulative-project radius. Unobstructed views of regional topographical features and undeveloped lands would be less available as grade-separated crossings introduce infrastructure that would limit and block views. The HSR project would also convert natural areas of vegetated desert to a linear transportation corridor. All other cumulative projects within a 6-mile radius were found to be of a scale or nature that would not contribute to a cumulative visual impact (e.g., a single mobile home, dog kennel, storage yard) and therefore removed from further consideration.

Implementation of the proposed mitigation measures stated above would reduce, to the greatest extent feasible, the project's contribution to cumulative impacts from the conversion of thousands of acres of mostly rural western Antelope Valley to solar energy production facilities, as well as other planned development. Therefore, the proposed project's contribution to cumulative visual impacts would not be cumulatively significant.

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Appendix A **Simulation Rating Forms**

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Appendix A. Simulation Rating Forms

Rating forms are prepared for the existing and proposed conditions for each photo simulation. The ratings are included in Section 5.3, *Impact Analysis*.

Form 1: Impact VIS-1 Ratings

Substant	Form 1: Simulation Visual Quality Ratings Substantially degrade the existing visual character or quality of public views the project site and its surroundings in non-urbanized areas, including scenic vistas										, including		
Key View	Existing	Existing Natural Harmony	Existing Cultural Order	Existing Project Site Coherence	Existing Visual Quality	VQ Rating	peso	Proposed Natural Harmony	Proposed Cultural Order	Proposed Project Site Coherence	Proposed Visual Quality	VQ Rating	Visual Quality Change
KV 1	xis	5	3.5	n/a	4.3	M	rop	4.5	3.5	3.5	3.8	M	-0.5
KV 2	щ	5	4	n/a	4.5	MH	Ъ	4	3.5	3.5	3.7	M	-0.8
KV 3		5	4	n/a	4.5	MH		4	3.5	3.5	3.7	M	-0.8
KV 4		4.5	3.5	n/a	4.0	M		4	3	3.5	3.5	M	-0.5
Refer to Di	agran	n 2-3 for Visu	ıal Quality F	Ratings.									

Form 2: Impact VIS-2 Ratings

	Form 2a: DAYTIME – Light and Glare (L&G) Ratings									
	Create a new source of substantial light or glare that would adversely affect day or nighttime views in the project area									
Key View	80	Proposed Project Vicinity L&G Levels	Existing Project Vicinity L&G Levels	L&G Level Increase	Existing/ Proposed L&G Rating	pə	Proposed Project Site L&G Levels	Existing Project Site L&G Levels	L&G Level Increase	Existing/ Proposed L&G Rating
KV 1	Existing	5	5	0	MH/MH	Proposed	5	5	0	MH/MH
KV 2	Exi	5	5	0	MH/MH	roj	5	5	0	MH/MH
KV 3		5	5	0	MH/MH	Н.	5	5	0	MH/MH
KV 4		5	5	0	MH/MH		5	5	0	MH/MH
			Form 2	b: NIGHTTIM	E – Light and G	lare (L	&G) Ratings			
Key View	ğ	Proposed Project Vicinity L&G Levels*	Existing Project Vicinity L&G Levels	L&G Level Increase	Existing/ Proposed L&G Rating	ed	Proposed Project Site L&G Levels*	Existing Project Site L&G Levels	L&G Level Increase	Existing/ Proposed L&G Rating
KV 1	stir	3	3	0	ML/ML	30S	1.5	1	0.5	VL/L
KV 2	Existing	3	3	0	ML/ML	Propose	1.5	1	0.5	VL/L
KV 3		3	3	0	ML/ML		1.5	1	0.5	VL/L
KV 4		3	3	0	ML/ML		1.5	1	0.5	VL/L

Refer to Diagram 2-4 for Light and Glare Ratings.

* The ratings assume project compliance with Kern County's Dark Skies Ordinance (Chapter 19.81).

Appendix B **Cumulative Projects**

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County of Kern

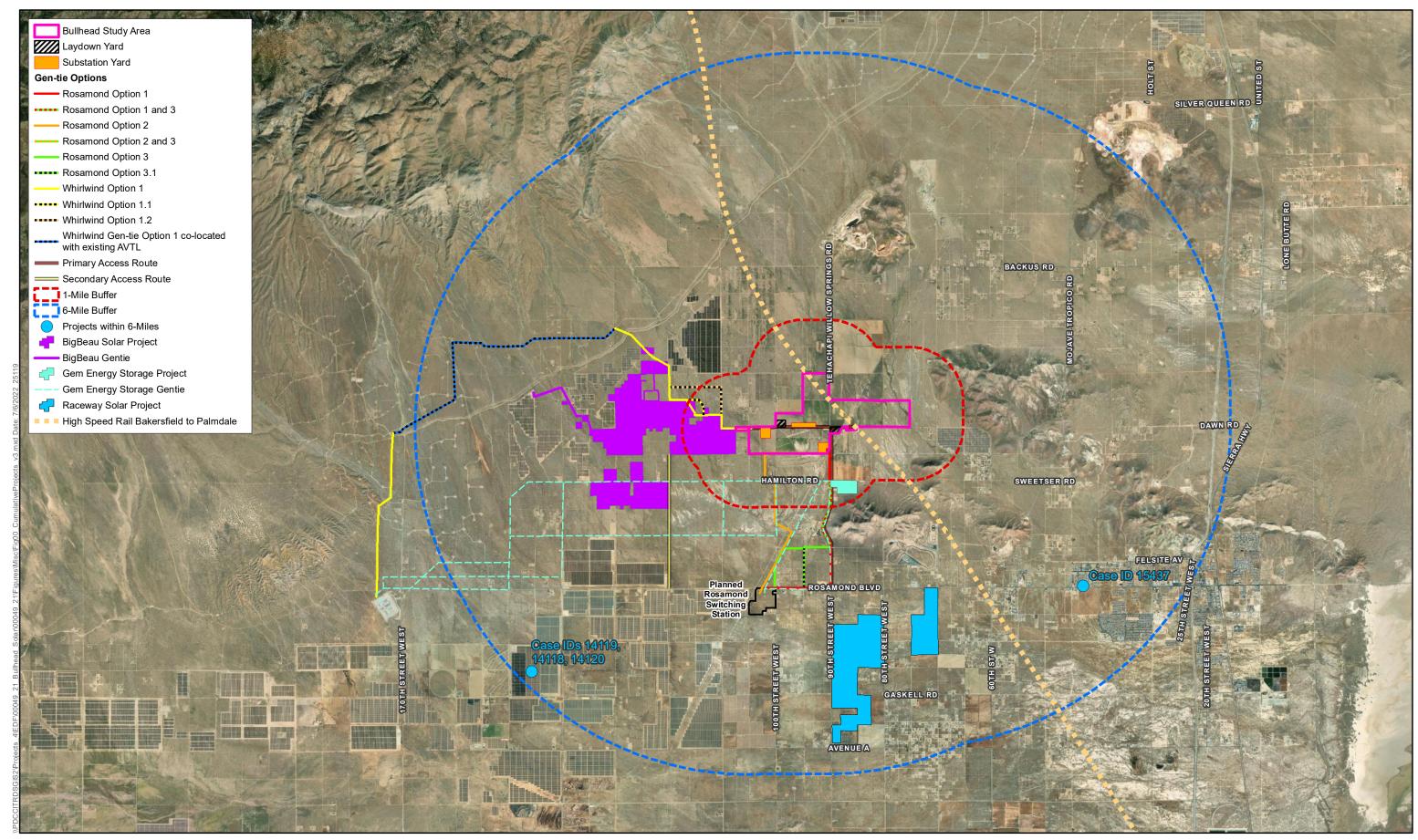
Table 1. Cumulative Projects List

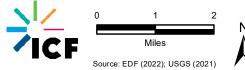
Distance										
from Bullhead Solar (Within)	CaseID/ Map ID	Applicant/Proje ct Name	Project Location	Project Description	Case Type	Project Site APN	Project Phase/Schedule	Acreage/ SF/Miles	Project Status	MW
1-Mile	-	EDFR/Big Beau Solar Project	North of Ave. to the Stars, South of 125th/Champagne Ave, East of 135th W., West of 105th St W.	128 MW AC photovoltaic solar and associated infrastructure, Gen-Tie Line, and 60 MW Battery Energy Storage System	ZCC, CUPs	Multiple	Under construction (10-14 months. Will be in full operation by time Bullhead is under construction in 2024.	2,285 acres	Approved Construction Phase	128
1-Mile		California High Speed Rail Authority, High Speed Rail Bakersfield to Palmdale Section	This segment of HSR is approximately 80 miles in length, with a stretch of approximately 1.5 miles crossing through the project study area in a northwest to southeast direction.	The High Speed Rail project in total consists of Phase 1 which is 520 miles connecting San Francisco to Los Angeles and Anaheim through the Central Valley of California. Phase 2 is approximately 300 miles connecting the Central Valley to Sacramento, Los Angeles and San Diego. The segment crossing through the Bullhead site is part of Phase 1. The HSR would consist of state-of-the-art, electrically powered, high-speed, steel while on steel wheel technology capable of operating up to 220 miles per hour over a fully grad-separated dedicated track.	N/A	346-032- 20, 346- 032-21, 346-032- 52, 346- 032-53, 315-050- 40	A joint CEQA/NEPA document was completed in August 2021 with a Notice of Determination and NEPA Record of Decision. hould this segment be funded for construction, a portion of the alignment crosses through part of the Bullhead Solar project site and accommodations may need to be made to reconfigure panels in that area should it become necessary. Construction of the Bakersfield to Palmdale segment is not projected to commence until after the Bullhead Solar project is operational.	1.5 miles in study area (80 miles in total length)	CEQA Approved. Construction funding and start is to be determined.	N/A
1-Mile	-	Hydrostar Gem A- CAES, LLC/Gem Energy Storage Center	South of Hamilton Road, east of Tehachapi Willow Springs Road. Transmission line alternatives generally follow Hamilton Road, Irone Avenue, 150 th Street W., and Fisher Ave heading toward existing Whirlwind Substation.	An Application for Certification is being processed with the California Energy Commission (CEC) for the development of an advanced compressed air energy storage facility. Gem would include all-electric air compressor trains, air driven power turbine generators, underground compressed air storage cavern, a 31-acre hydrostatically compensating water reservoir, an onsite 230kV substation, and up to 10.9 miles of transmission line to the Whirlwind substation, among other infrastructure.	ZC, CUP	315-081- 01, 315- 011-09, 315-081 09	Under review by the CEC. Anticipated construction to commence in Q3 or Q4 2023 and would be operational before Bullhead is constructed.	71 acres plus 40-acre laydown area.	Anticipated CEC approvals by July 2023	500

County of Kern

Distance from Bullhead Solar (Within)	CaseID/ Map ID	Applicant/Proje ct Name	Project Location	Project Description	Case Type	Project Site APN	Project Phase/Schedule	Acreage/ SF/Miles	Project Status	MW
6-Miles	15437	Investment Concepts	NE corner of Rosamond and Sedona	A CUP to construct an 18-unit apartment complex in a C-1 zone.	CUP	252-161- 492	Construction phase not available; assumed overlap with Bullhead construction.	18 units	Approved	NA
6-Miles	14119, 14118, 14120	SGS Antelope Valley Development /Rosamond Solar Modification Project	East side of 150th Street W, approximately 1/2 mile south of Rosamond Boulevard and 1/2 mile north of Avenue A in the Rosamond area.	Addition of 100 MW of solar power on 400 adjacent acres to original project.	SPA, ZCC, CUP Mod	Multiple	Construction phase not available; assumed overlap with Bullhead construction.	1,360 acres	Approved	100
6-Miles	-	Raceway Solar	Between Rosamond Blvd. and Avenue A and between 70th Street W and 90th Street W.	Two solar photovoltaic projects on six sites totaling 1,330 acres, with 291 MW of electricity and 291 MWh energy storage.	SPA, ZCC, CUPs	Multiple	Construction underway. Will be completed by 2023; project will not overlap with Bullhead Solar construction.	1,330 acres	Approved	291

(-) not available. N/A = Not Applicable





Appendix C: Farmland Conversion Report



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August 8, 2022

Scott Kuhlke Director Development EDF Renewables 1999 Harrison Street, Suite 675 Oakland, CA 94612

Subject: Bullhead Solar Project Farmland Conversion Report

Dear Mr. Kuhlke:

This letter provides information regarding the agricultural status of the property related to the Bullhead Solar Project in Kern County, California. Information regarding the existing conditions, site history, planning regulations, and potential impacts pursuant to the California Environmental Quality Act (CEQA) are described. Additionally, Kern County Application for Zone Change (Form 101) and Kern County Agricultural Preserve—Petition for Exclusion (Form 104) are attached (Attachments 1 and 2).

Elet wile

Sincerely,

Digna C. Robas

Diana Roberts Ellen Miille

ICF Technical Lead ICF Project Director

Attachments

Project Overview

EDF Renewables (EDFR) proposes the Bullhead Solar Project (project) to develop up to 270 megawatts (MW) (alternating current [AC]) of solar photovoltaic (PV) capacity derived from tracker technology and up to 270 MW of battery storage. The project includes solar development with associated PV panels, inverters, converters, generators, foundations, transformers, and preferred and optional generation-tie (gen-tie) routes to the Rosamond and Whirlwind substations, only one of which would be constructed. The project includes laydown yards, a meteorological station, a microwave/communication tower, a substation, and a temporary concrete batching plant.

Project Location and Setting

The project is generally located in southern Kern County, California. The project site is approximately 52 miles southeast of the city of Bakersfield, 19 miles south of the City of Tehachapi, 8 miles northwest of the community of Rosamond, and 2 miles north of the community of Willow Springs. Other communities within the vicinity of the project site include Mojave in Kern County and the cities of Lancaster, Palmdale, and Neenach in Los Angeles County, which are roughly 12 miles northeast, 17 miles southeast, 24 miles southeast, and 18 miles southwest of the project, respectively.

Figure 1 shows the project site and the surrounding area. The project study area, which comprises the project site, is in an area of low population density and traversed by a network of dirt roads. Figure 2 shows the conceptual site plan of the project study area. See the *Figures* section at the end of this report.

The project study area, which is generally undeveloped rangeland, covers approximately 1,359 acres, and is within Kern County Zone Map Areas 214, 231, and 232 as shown on Figure 3 (Kern County 2013). Many of the lands surrounding the site have either been approved for or are in the planning stages of development for solar or wind energy. This area of the county is recognized by the National Renewable Energy Laboratory (NREL) as having solar and wind resources suitable for renewable energy development (NREL 2015).

Land Use Designations

General Plan Land Use Designations

The project site includes land designated for the following types of agricultural use under the Kern County General Plan (Kern County 2004) (Figure 4):

- 8.1 (Intensive Agriculture [minimum 20-acre parcel size])
- 8.3 (Extensive Agriculture [minimum 20-acre parcel size])

According to the *Kern County General Plan*, the Intensive Agriculture (minimum 20-acre parcel size) land use designation applies to areas devoted to the production of irrigated crops or having a potential for such use. Typical uses include irrigated cropland; orchards; vineyards; horse ranches; growing nursery stock ornamental flowers and Christmas trees; fish farms; beekeeping; ranch and

farm facilities and related uses; one single-family dwelling unit; cattle feed yards; dairies; dry land farming; livestock grazing; water storage; groundwater recharge areas; mineral, aggregate, and petroleum exploration and extraction; hunting clubs; wildlife preserves; farm labor housing; public utility uses; and agricultural industries. The minimum allowable parcel size in the Intensive Agriculture category is 20 acres gross.

The Extensive Agriculture (minimum 20-acre parcel size) land use designation applies to agricultural uses involving large amounts of land with relatively low value-per-acre yields. Typical uses include livestock grazing, farming, and woodlands. The minimum allowable parcel size in the Extensive Agriculture category is 20 acres gross.

The site also includes land designated for the following types of use other than agriculture under the Kern County General Plan:

- 2.5 (Flood Hazard) (environmental constraints overlay)
- 4.1 (Accepted County Plan Areas) (Willow Springs Specific Plan)

The Resource Management (minimum 20-acre parcel size) land use designation applies to primarily open space lands containing important resource values, such as wildlife habitat, scenic values, or watershed recharge areas. These areas might be characterized by physical constraints, constitute an important watershed recharge area or wildlife habitat, or have value as a buffer between resource areas and urban areas. Other lands with this category are undeveloped, nonurban areas that do not warrant additional planning within the foreseeable future because of current population conditions (or anticipated population change), marginal physical development, or no subdivision activity.

The Flood Hazard land use designation is for land identified on the Flood Insurance Rate Maps (FIRM) of the Federal Emergency Management Agency (FEMA) and floodplain-delineating maps that have been approved by the Kern County Engineering and Survey Services Department as Special Flood Hazard Areas (Zone A). Goal 1, Policy 10 of the Land Use Element of the General Plan states:

The County will allow lands which are within flood hazard areas, other than primary floodplains, to be developed in accordance with the General Plan and Floodplain Management Ordinance, if mitigation measures are incorporated so as to ensure that the proposed development will not be hazardous within the requirements of the Safety Element of the General Plan.

The Accepted County Plan Areas land use designation (4.1) is used for land for which specific land use plans have already been prepared and approved. As shown on Figure 4, a portion of the project study area (518 acres or approximately 38 percent) is part of the Willow Springs Specific Plan area, lying within general plan designation 4.1 (Accepted County Area Plans). The Willow Springs Specific Plan area does not include land use designations for agricultural use (Kern County 1992).

Within the project study area, 841cres (approximately 62 percent) are designated for agricultural use under the *Kern County General Plan*. Solar facilities are an allowable use within each of the General Plan designations listed above.

Zoning

The project study area is within two zoning districts in Kern County (Kern County 2021) (Figure 5):

- 1. Exclusive Agriculture (A)
- 2. Estate (E)

Pursuant to Kern County Zoning Ordinance Sections 19.12.020 and 19.12.030, solar facilities are permitted on areas zoned for Exclusive Agriculture (A) subject to a conditional use permit (CUP). However, solar facilities are not permitted on lands under the other zoning types. Therefore, EDFR is seeking to rezone portions of the project study area from Estate (E) to the Exclusive Agricultural (A) zone district. Kern County Application for Zone Change (Form 101) is attached (Attachment 1)¹.

Within the project study area, 841 acres (approximately 62 percent) are zoned for agricultural use. Figure 6 shows the proposed zoning. Zoning classifications surrounding the project study area are similar to those within the project study area (Kern County 2021) and include Exclusive Agriculture, Estate, and Open Space, but also include Platted Lands.

Farmland

Portions of the project study area lie within an area designated as Important Farmland (i.e., land categorized as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland by the California Department of Conservation Farmland Mapping and Monitoring Program [FMMP]), as shown in Figure 7. Land uses within the project study area as designated by the FMMP, including Important Farmland, are listed in Table 1, Land Use Categories within the Project Study Area as Designated by the FMMP.

Table 1. Land Use Categories within the Project Study Area as Designated by the FMMP

Land Use Category	Acres	Percentage
Prime Farmland	-	-
Farmland of Statewide Importance	395	29
Unique Farmland	6	<1
Subtotal, Important Farmland	401	29
Grazing Land	108	8
Other Land (Nonagricultural and Natural Vegetation)	524	39
Other Land (Vacant or Disturbed)	326	24
Total Project Site Acreage	1,359	

Source: DOC 2018

Any project construction on land categorized as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland would constitute a direct impact on Important Farmland. Approximately 401 acres (29 percent) of land within the project study area is considered Important Farmland; most of it is categorized as Farmland of Statewide Importance (395 acres) and the remainder is Unique Farmland (6 acres) (DOC 2018). Other FMMP land uses occupying the project study area include Grazing Land and Other Land; Other Land is further designated under the California Department of Conservation's (DOC) Rural Land Mapping Project as Nonagricultural or Natural Vegetation and Vacant or Disturbed Land. No land within the project study area is designated as Prime Farmland or Unique Farmland. Generally, proposed gen-tie lines follow existing roads or transmission lines and do not cross agricultural lands. Any proposed gen-tie lines outside

¹ Assessor's parcel numbers within the study area are listed in Attachment A to the Entitlement Package and depicted in Figure 3, Zone Map.

the project footprint that may be constructed on Important Farmland would not interfere with agricultural use.

In addition, an indirect impact on Important Farmland could result if unusable parcels of Important Farmland are created by parcel severance from access or creation of remnant parcels too small to farm through construction of new roads. While no new roads are proposed, 120th Street West may be improved, including widening up to 50 feet and grading. The widened road would not sever any parcels from access nor create any unfarmable remnant parcels.

Agricultural Preserves and Williamson Act Contracts

Approximately 841 acres of the project study area (62 percent) are within the Kern County Agricultural Preserve Number 24 boundary (Figure 8). Lying within an agricultural preserve is a prerequisite for placement under a Williamson Act contract. However, no parcels within the project study area are under any Williamson Act contracts. Because agricultural preserves do not permit solar facilities, the project includes a Petition for Exclusion (Form 104, Attachment 2) to remove the portions of the project subject to the boundaries of Agricultural Preserve Number 24.

Conclusions

In accordance with Appendix G of the State CEQA Guidelines, the project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use.
- Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract.
- Other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to nonagricultural use.

In addition, Appendix G of the CEQA Guidelines also evaluates potential impacts on forest land. Because none is present in the study area, these impact thresholds are not discussed further.

Conversion of Important Farmland

As discussed above, approximately 395 acres of land within the boundary of the project study area are categorized as Farmland of Statewide Importance, and 6 acres are categorized as Unique Farmland, both considered Important Farmland by the FMMP, for a total of 401 acres of Important Farmland. The remainder of the land is classified as Grazing Land, Other Land (Nonagricultural and Natural Vegetation), and Other Land (Vacant or Disturbed). Therefore, the project has potential to affect these 401 acres of Important Farmland directly.

The project has an anticipated operational life of up to 35 years, after which the project proponent may choose to update site technology, recommission and extend the CUP, or decommission the site and remove the systems and their components. All decommissioning and restoration activities would adhere to the requirements of the appropriate governing authorities and be in accordance

with all applicable federal, state, and county regulations. Because supporting equipment for the PV arrays would sit on the surface of the land, the land would be largely unaltered from its current state when the arrays are removed after the proposed project's lifetime. The proposed project would utilize best management practices to ensure the collection and recycling of modules and batteries and to avoid being disposed of as municipal waste.

A 2020 California appeals court found that in the case of *King and Gardiner Farms, LLC v. County of Kern et al.*, restoration of agricultural land to productive use after project decommissioning is sufficient to result in no net loss of agricultural land for the acres that would be restored. However, the Bullhead project site is currently fallow, and the proposed solar development would not damage the land to the extent that it would prohibit future agricultural use, provided that the solar development improvements are fully removed upon decommissioning.

If Important Farmland at the project study area is not restored to its current use after project decommissioning, the project would result in permanent conversion of Important Farmland to nonagricultural uses.

Conflict with Existing Zoning or a Williamson Act Contract

The project study area is currently designated for 8.1 (Intensive Agriculture), 8.3 (Extensive Agriculture), 2.5 (Flood Hazard) (environmental constraints overlay), and 4.1 (Accepted County Plan Areas) (*Willow Springs Specific Plan*). Solar facilities are an allowable use within each of the project site's land use designations.

The project study area is presently zoned Exclusive Agriculture (A) and Estate (E). With the proposed rezoning of all areas not currently zoned as Exclusive Agriculture (A) to Exclusive Agriculture (A), the solar facility would be allowed with approval of a CUP, in accordance with Kern County Zoning Ordinance Section 19.12.030. In addition, the project would not introduce a nonagricultural use incompatible with nearby agricultural operations, which thereby might create pressure for conversion to nonagricultural uses. Therefore, the project would not conflict with existing zoning.

Portions of the project study area are within Kern County Agricultural Preserve Number 24, but are not under a Williamson Act contract and would not affect adjacent properties under Williamson Act land use contracts. Therefore, the project would not present a conflict with a Williamson Act contract. In order to remain consistent with requirements for agricultural preserves, those portions of the project study area that are within Kern County Agricultural Preserve Number 24 would be removed from the preserve through completion of Kern County Form 104.

Other Changes in the Existing Environment that Could Result in Conversion of Farmland to Nonagricultural Use

As discussed above under Farmland, an indirect impact on Important Farmland could result if unusable parcels of Important Farmland are created by parcel severance from access or creation of remnant parcels too small to farm through construction of new roads. However, the project would not indirectly affect any Important Farmland through creation of severed parcels or remnant parcel of Important Farmland that would be too small to farm productively.

Bullhead Solar Project Farmland History Report August 8, 2022 Page 7 of 8

In addition, an indirect impact on Important Farmland could result if the project is incompatible with nearby parcels on Important Farmland in agricultural use. Activities associated with operations and maintenance of the project would not affect any nearby agricultural activities because they would not affect Farmland access or result in nuisance complaints about nearby agricultural activities.

Summary

The project would result in use of Important Farmland, which could lead to permanent conversion of Important Farmland to nonagricultural uses, depending on whether decommissioning of the project study area includes restoration of Important Farmland to current use. The decommissioning plan includes restoration after decommissioning to current use.

The project would not conflict with general plan designation because all general plan designations are consistent with solar facility uses. The project would not conflict with zoning because the project includes rezoning of lands in the project study area that have zoning types inconsistent with solar facilities. These lands would be rezoned to Exclusive Agriculture, which is consistent with solar facility uses. The project would not conflict with Williamson Act contract because no parcels under Williamson Act contract lie within the project site. In addition, the project would not conflict with agricultural preserves, even though a portion of the project study area lies within an agricultural preserve, because the project includes a petition to remove the portions of the project from Agricultural Preserve Number 24.

The project would not result in other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to nonagricultural use. The project would not create any severed or remnant parcels of Important Farmland. Further, the project would not introduce a nonagricultural use that is incompatible with agricultural operations that occur nearby.

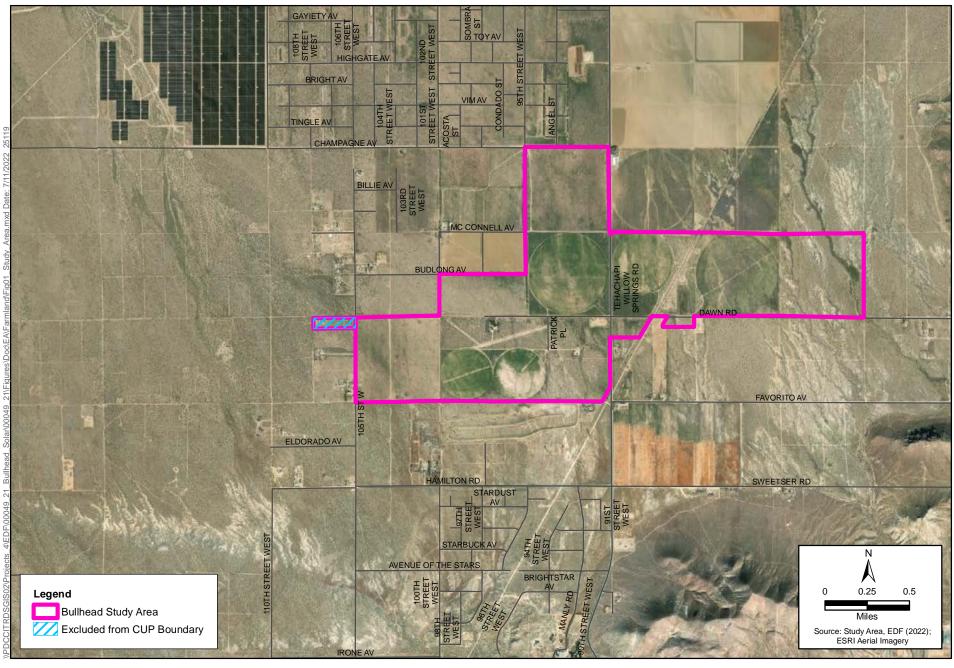
If you have any questions regarding this letter, please feel free to contact Ellen Miille at Ellen.Miille@icf.com or by phone at (303) 792-7831.

References

- California Department of Conservation (DOC). 2018. California Important Farmland. Available: gis.conservation.ca.gov/server/rest/services/DLRP/CaliforniaImportantFarmland_2018/Featur eServer. Accessed: July 26, 2021.
- Kern County. 1992 (Amended 1 April 2008). *Willow Springs Specific Plan*. Bakersfield, CA: Kern County Department of Planning and Development Service. Available: psbweb.co.kern.ca.us/planning/pdfs/SPs/WillowSprings_SP.pdf. Accessed: April 30, 2021.
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- Kern County. 2021. Kern County Zoning Ordinance, Title 19, Chapter 19.12, Exclusive Agricultural, and Chapter 19.53.
- National Renewable Energy Laboratory (NREL). 2015. *Initial Investigation into the Potential of CSP Industrial Process Heat for the Southwest United States*. Prepared by Parthiv Kurup and Craig Turchi. Available: www.nrel.gov/docs/fy16osti/64709.pdf. Accessed April 26, 2021.

Figures

Figure 1	Project Site and Surrounding Area
Figure 2	Conceptual Site Plan of the Project Study Area
Figure 3	Kern County Zone Map Areas
Figure 4	Kern County General Plan Land Use Designations
Figure 5	Kern County Zoning Designations
Figure 6	Proposed Zoning
Figure 7	Important Farmland
Figure 8	Kern County Agricultural Preserve Number 24 Boundary





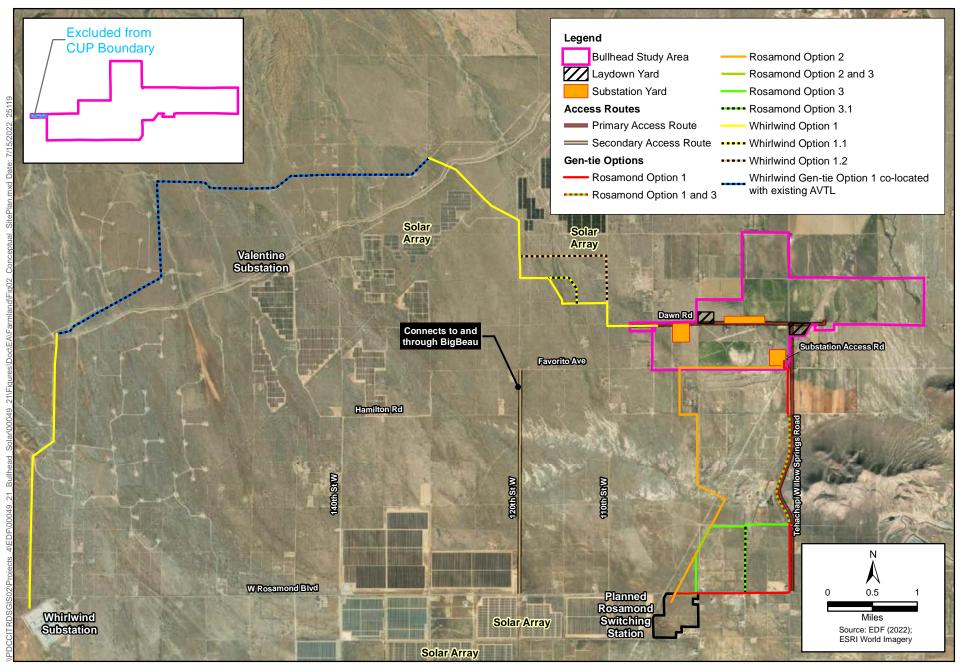




Figure 2 Conceptual Site Plan Bullhead Solar

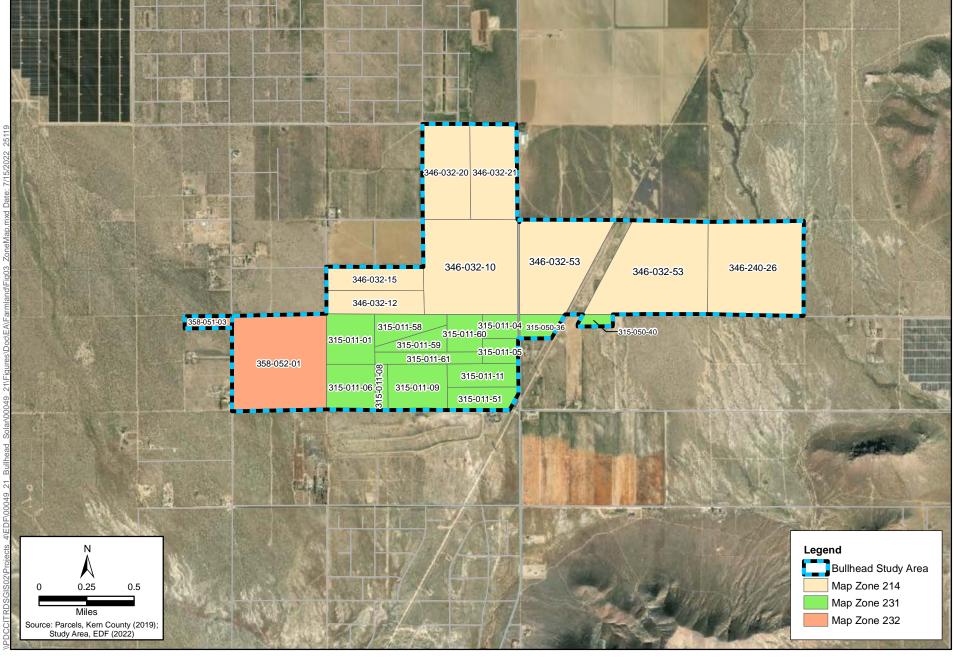
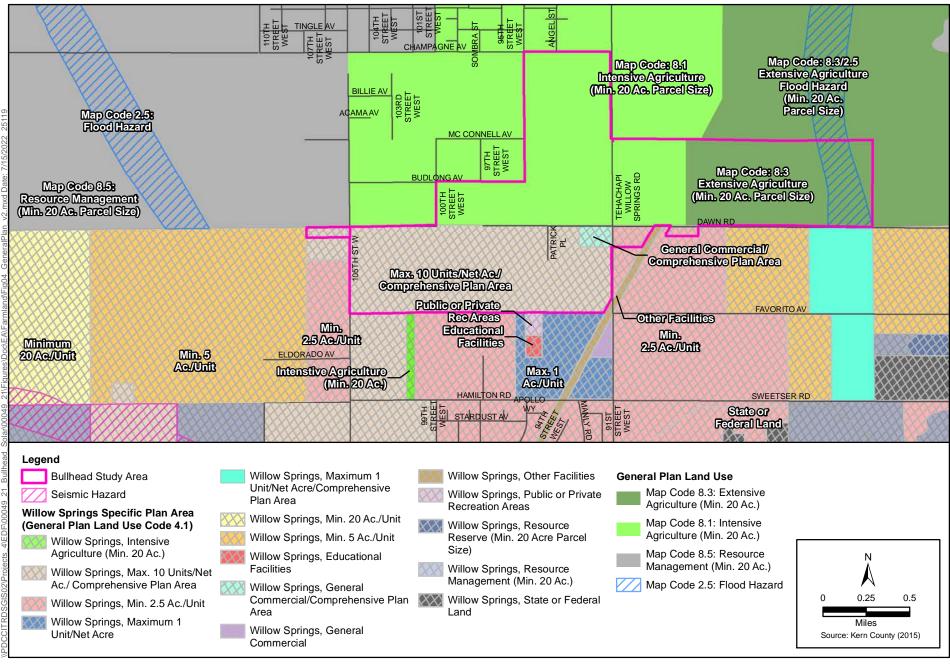
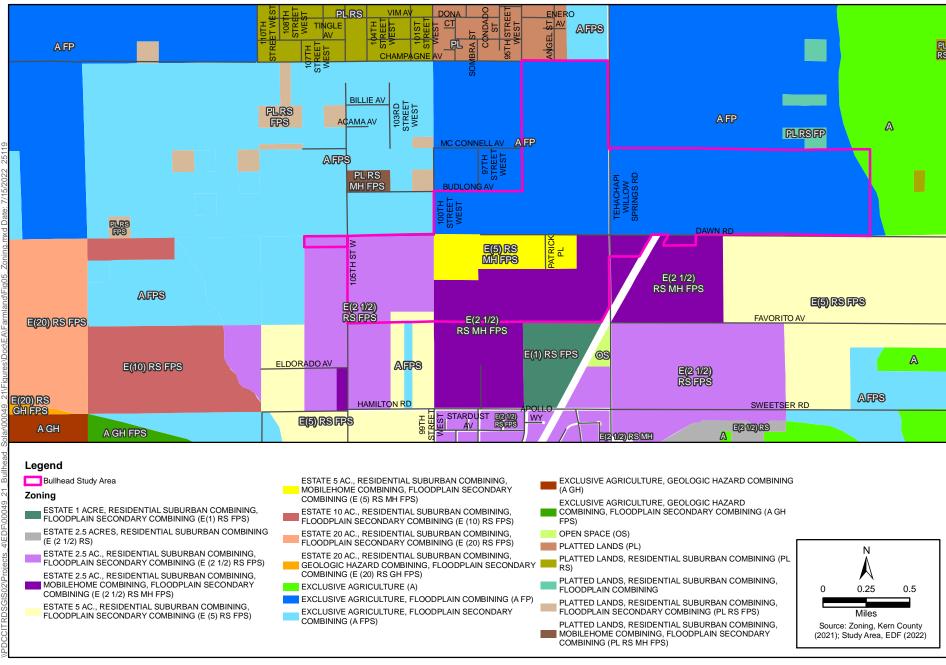




Figure 3 Zone Map Bullhead Solar









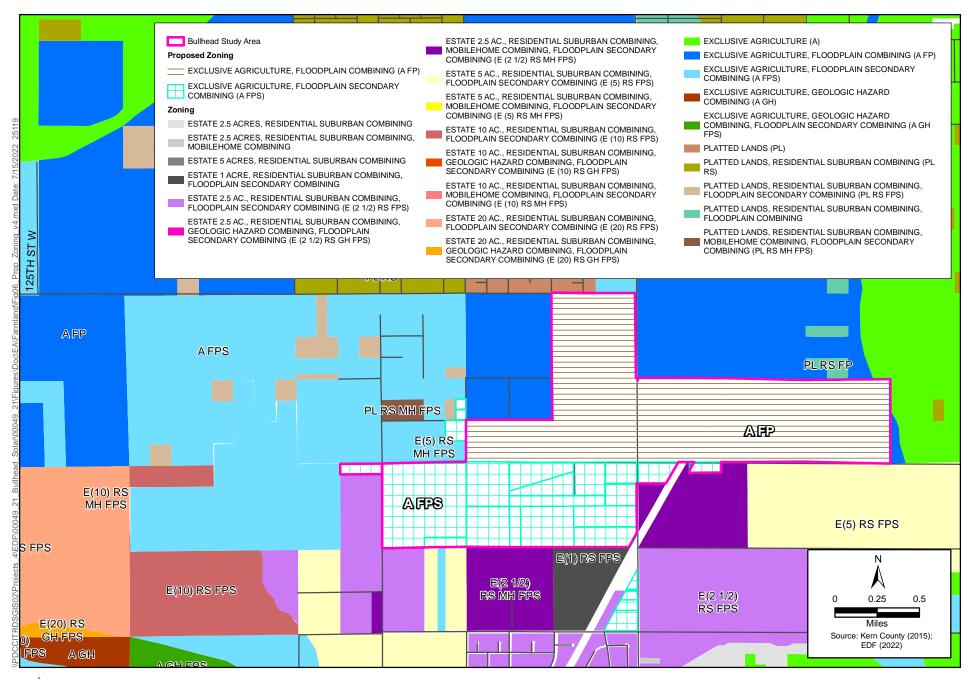
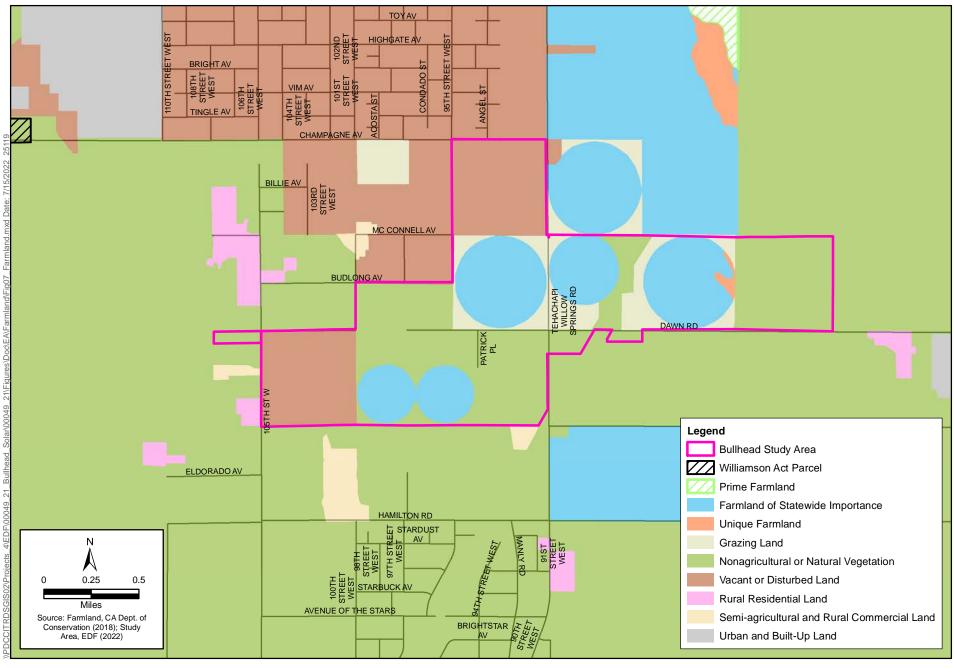
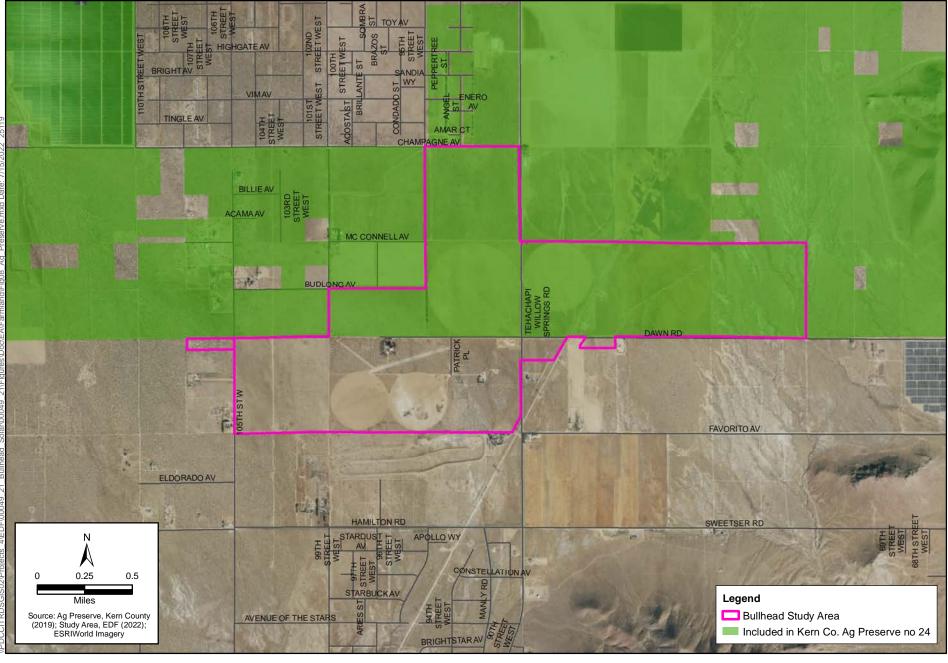




Figure 6
Proposed Zoning
Bullhead Solar









Attachments

- Attachment 1 Kern County Applications for Zone Change (Form 101)
- Attachment 2 Kern County Agricultural Preserve—Petition for Exclusion (Form 104)

Attachment 1

Kern County Applications for Zone Change (Form 101)

KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT

INSTRUCTIONS TO APPLICANT FILING FOR ZONE CHANGE

I. GENERAL INFORMATION

A request for change of a land use zone classification is a request to amend the official Ordinance Code of Kern County. As such, a request for change of zone must meet certain procedural and legislative requirements in order for an application to be accepted and processed.

IMPORTANT - INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED

A proposal for change of zone must be consistent with the land use designation that exists on the adopted elements of the applicable General or Specific Plan. An application for change of zone will not be processed if the request is inconsistent with the General Plan or an adopted specific plan.

A change of zone must comply with the provisions of the California Environmental Quality Act (CEQA), and findings must be made and/or documents prepared signifying the degree of potential environmental impact of a proposed change of zone prior to the commencement of public hearing. The degree of potential environmental impact of a project will be determined by the Department Staff after completing an initial review of the proposal. In addition to this application, information, materials, and filing fees may be required in order to conduct the CEQA Initial Study and prepare a CEQA document.

The Department will prepare a staff report and recommendation on the zone change request. The Kern County Planning Commission will consider the change of zone at a duly noticed and advertised public hearing. The Planning Commission's responsibility is to make a recommendation to the Kern County Board of Supervisors, after which another noticed and advertised public hearing is scheduled before the Board of Supervisors. The action of the Board of Supervisors is final.

II. APPLICATION INSTRUCTIONS

Please complete the application in its entirety. **Please type all application information legibly**.

- 1. **Plot Plan.** All applications must include a plot plan. The plot plan must meet the following minimum criteria:
 - a) Scale of the drawing and north point
 - b) The street address of the property and a vicinity map showing adjacent streets and other landmarks to assist in locating the property, distance and direction from the nearest road intersection, and any other identifying features
 - c) The location of all existing and proposed uses, structures, fences, signs, landscaping, and improvements
 - d) The location of all off-street parking and loading facilities, including driveways, individual parking and loading zones, points of ingress and egress, median strips, and traffic islands

FORM 101 (3/2020) (page 1 of 8)

- e) An elevation sketch of all existing and proposed signs, fences, and structures, including dimensions and heights above the ground
- f) Any other information which the applicant or the Director of the Department deems necessary for proper consideration of the application
- 2. **Environmental Assessment Form.** A fully complete and accurate Environmental Assessment Form (EAF) must be submitted with the application for change of zone. The EAF can be obtained from the Planning and NATURAL RESOURCES Department.
- 3. **Filing Fees.** A Preliminary Review fee of \$260 is required. Application for Zone Change fee is a \$2,000 deposit or flat fee. See the Land Development Services Fee Schedule for further information.

NOTE

The Department may charge additional fees on a time-and-material basis if the proposed project is such that the scope of Staff work required is beyond that normally associated with an application for change of zone. The applicant will be notified prior to implementation of such a fee structure for the project. The issuance of a receipt for filing fee signifies the start of the application process.

- 4. **Legal Description.** Submittal of a complete and accurate legal description is required. It is preferred that a copy be included as an electronic version in the Microsoft Word format.
- 5. **Other Materials or Data.** The Department may require such other materials, data, or reports as are determined necessary to conduct an appropriate analysis of the project.
- 6. **Optional Materials.** The applicant may submit statements, letters, or petitions in support of the request. Any other studies, reports, or materials pertaining to the request may also be submitted by the applicant.
- 7. **Processing Time.** Processing time is variable for each request. Processing time is dependent upon the degree of complexity of each case, the adequacy of information provided by the applicant, and the type of CEQA document required for the proposal. An estimate of the time required to achieve a hearing date can be given by the Department after conclusion of the Initial Study.
- 8. **Questions and Assistance.** Department Staff is available to answer questions or provide assistance in the preparation of an application for change of zone.

FORM 101 (3/2020) (page 2 of 8)

APPLICATION FOR ZONE CHANGE

KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT 2700 "M" Street, Suite 100

Bakersfield, CA 93301 (661) 862-8600

	SECTION A - APPLICANT
1.	Name of Applicant: EDF Renewables
	Mailing Address 1999 Harrison Street, Suite 675
	City Oakland State CA Zip Code 94612
	Telephone: (510) 457-2168 Fax: (510) 457-2160 Email scott.kuhlke@edf-re.com
2.	Name of Individual Representative (if not same as above): Scott Kuhlke, Director
	Mailing Address (include Zip Code): Same as above
	Telephone: Fax: Email
	SECTION B - PROPERTY OWNER(S)
1.	Name of Current Record Property Owner(s) (if not same as above): See Attachment A: APN List (Zone Map 231)
	Mailing Address
	City State Zip Code
	Telephone: Fax: Email
2.	Approximate Date Interest in Property Was Acquired:
	Month/Year
	SECTION C – PROJECT DESCRIPTION
1.	Existing Site Zoning: Estate [E (5) RS MH FPS; E (2 1/2) RS MH FPS; & E (2 1/2) RS FPS]
2.	Proposed Change of Zone: Exclusive Agriculture (A) and maintaining the existing environmental
	constraint overlay where applicable (see Attachment A: APN List, and Figure 15, Bullhead Zone Change Map).
3.	Exact Description of Proposed Project for Which Change of Zone is Sought: Development of up to 270
	megawatts (MW) photovoltaic (PV) solar with up to 270 MW of battery storage on 1,349.5 acres, including PV panels, battery storage, generators, foundations, generation tie routes,
	transformers, substations, laydown yards, a meteorological tower, communication towers, and inverters. See attached Project Description for more details.
4.	Description of Private or Public Basic Need Infrastructure Services Available to Site:
	Sewage Disposal: N/A - portable restrooms will be used during construction. No operational component requires sewer.
	Domestic Water: See Project Description. To be purchased from local supplier.
	Site Access: See Figure 11, Project Access Routes.

FORM 101 (3/2020) (page 3 of 8)

·	CTION D - SITE LOCATION
Street Address of Site (if avail	able): Zone Map 231. See Attachment A: APN List.
	The overall project site is approximately 12 miles south west of State Route (SR) 58 and approximate
Description of Site Location:	
	mately 7 miles to the east and SR 138 is approximately 9 miles to the south. Specifically, the project wn Road to the north, 100th Street to the west, Sweetser Road to the south, and 85th Street to the north.
Complete and Accurate Site L See Attachment B: Legal	egal Description (attach additional pages as needed): Descriptions.
A de Describilitation (a)	See Attachment A: APN List.
Assessor's Parcel Number(s):	Site: Approximately 1,349.5 acres total
Soliare Footage or Acreage of	
Present Land Use of Project Si	Vacant rural lands, agricultural fields, residential
Present Land Use of Project S	Vacant rural lands, agricultural fields, residential
Present Land Use of Project Si	Vacant rural lands, agricultural fields, residential
Present Land Use of Project Si Surrounding Land Uses: North - Vacant and solar de	Vacant rural lands, agricultural fields, residential
Present Land Use of Project Si Surrounding Land Uses: North - Vacant and solar de	Vacant rural lands, agricultural fields, residential
Present Land Use of Project Si Surrounding Land Uses: North - vacant and solar de	Vacant rural lands, agricultural fields, residential evelopment

SECTION E - BASIS OR EXPLANATION OF NEED FOR CHANGE OF ZONE

Pursuant to Sections 19.12.020 and 19.12.030 of Kern County Zoning Ordinance, solar facilities are permitted on areas zoned for Exclusive Agriculture (A) subject to a Conditional Use Permit. Therefore, the portions of the proposed project site within Zone Map 231 that are zoned Estate (E) are seeking a change of zone to the Exclusive Agriculture (A) zone district.

FORM 101 (3/2020) (page 4 of 8)

SECTION F - VERIFICATION STATEMENT

The California Legislature has passed a law that requires persons applying for development projects to review a listing of all hazardous waste sites. For a current list of the Hazardous Waste Sites, please go to the California Environmental Protection Agency website at: http://www.calepa.ca.gov/SiteCleanup/CorteseList/. If the site of your proposed development project is included on the list of hazardous waste sites, then it shall be so noted. Please note that if your proposed development project site is included on the Cortese list, the preparation of an environmental document will be required in conjunction with the project, per Section 65962.5. A copy of the law requiring this verification is attached for your reference. Please review the list of hazardous waste sites and sign the Verification Statement below.

(Review of list related to hazardous waste sites)

I, EDF Renewables	, as applicant for a development project, have
Charles a trade and shall be a calculated by a superior	ous wastes pursuant to Section 65962.5 of the California Government on the list. (CIRCLE ONE)
List (if applicable)	Stann Worl
Date	e tentuos est e Signature de lo truit del vius est et balogidos ton
I hereby certify to the County of Kern the applicant for this request and that I have that this is a request to initiate a request commitment or opinion of the final resonant that the commitment of the final resonant that the commitment of the final resonant that the country of the final resonant that the country of the final resonant that the country of the count	at I, HANSON WOOD, am the e read and understand the instructions to applicant. I understand st for change of zone procedures only and does not constitute a colution of this request. Fees submitted are application filing fees are true and correct. The first procedure is a policy of the submitted are application and the attachments and are true and correct.
Signature of Applicant	Date
Signature of Property Owner of Record	Date

SECTION H - INDEMNIFICATION AGREEMENT

In consideration by the County of Kern of a permit for a land use approval project located at

Zone Map 231. See Attachment A: APN List, and Project Description

(address or general location)

I/We (identified below) agree to indemnify, defend, and hold harmless the County of Kern and its officers, agents, employees, departments, commissioners and boards ("County" herein) against any and all liability, claims, actions, causes of action or demands whatsoever against them, or any of them, before administrative or judicial tribunals of any kind whatsoever, in any way arising from, the Applicant's representations contained within this application, including without limitation any CEQA determination or any related development approvals or conditions, whether imposed by County or not, except for County's sole active negligence or willful misconduct.

This indemnification agreement does not prevent the Applicant or property owner from challenging any decision by County related to this project and the obligations of this condition apply regardless of whether any other permits or entitlements are issued.

County will promptly notify Applicant and property owner (if different than Applicant) of any such claim, action, or proceeding, falling under this condition within thirty days of actually receiving such claim. County, in its sole discretion, shall be allowed to choose the attorney or outside law firm to defend County at the sole cost and expense of the Applicant and/or property owner, jointly and severally, and County is not obligated to use any law firm or attorney chosen by another entity or party.

Applicant/Contact:

FDF Renewables

Print Name

Signature

0-202 Date (If the applicant is not an individual, the corporation name goes under "Print Name", authorized signature below it, and complete below.)

Bv:

Hanson Wood

Print Name

Title:

Vice President - Development, West Region

IMPORTANT NOTE:

Original signatures of the applicant are required on this form for this application to be considered complete for processing.

OFFICE USE ONLY

Zone Change Case No		Zone Map No
Work Order No.		<u> </u>
FILING FEES		DESIGNATIONS
A. Zone Change	\$	S.D. No
B. EAF	\$	G.P. Designation
C	\$	S.P. Designation
D	\$	S.P. Title
TOTAL	\$	Floodplain
Receipt No.		Airport P.A
	AC	CCEPTANCE
Ву:		Date:
		A EVALUATION avironmental Assessment Form (EAF).
In acc		61(b)(3), it can be seen with certainty that this proposal will
Basis for Finding:		
		NOTES

FORM 101 (3/2020) (page 7 of 8)

65962.5. (a) The Department of Toxic Substances Control shall compile and update as appropriate, but at least annually, and shall submit to the Secretary for Environmental Protection, a list of all of the following:

- (1) All hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code.
- (2) All land designated as hazardous waste property or border zone property pursuant to former Article 11 (commencing with Section 25220) of Chapter 6.5 of Division 20 of the Health and Safety Code.
- (3) All information received by the Department of Toxic Substances Control pursuant to Section 25242 of the Health and Safety Code on hazardous waste disposals on public land.
- (4) All sites listed pursuant to Section 25356 of the Health and Safety Code.
- (b) The State Department of Health Services shall compile and update as appropriate, but at least annually, and shall submit to the Secretary for Environmental Protection, a list of all public drinking water wells that contain detectable levels of organic contaminants and that are subject to water analysis pursuant to Section 116395 of the Health and Safety Code.
- (c) The State Water Resources Control Board shall compile and update as appropriate, but at least annually, and shall submit to the Secretary for Environmental Protection, a list of all of the following:
- (1) All underground storage tanks for which an unauthorized release report is filed pursuant to Section 25295 of the Health and Safety Code.
- (2) All solid waste disposal facilities from which there is a migration of hazardous waste and for which a California regional water quality control board has notified the Department of Toxic Substances Control pursuant to subdivision (e) of Section 13273 of the Water Code.
- (3) All cease and desist orders issued after January 1, 1986, pursuant to Section 13301 of the Water Code, and all cleanup or abatement orders issued after January 1, 1986, pursuant to Section 13304 of the Water Code, that concern the discharge of wastes that are hazardous materials.
- (d) The local enforcement agency, as designated pursuant to Section 18051 of Title 14 of the California Code of Regulations, shall compile as appropriate, but at least annually, and shall submit to the Department of Resources Recycling and Recovery, a list of all solid waste disposal facilities from which there is a known migration of hazardous waste. The Department of Resources Recycling and Recovery shall compile the local lists into a statewide list, which shall be submitted to the Secretary for Environmental Protection and shall be available to any person who requests the information.
- (e) The Secretary for Environmental Protection shall consolidate the information submitted pursuant to this section and distribute it in a timely fashion to each city and county in which sites on the lists are located. The secretary shall distribute the information to any other person upon request. The secretary may charge a reasonable fee to persons requesting the information, other than cities, counties, or cities and counties, to cover the cost of developing, maintaining, and reproducing and distributing the information.
- (f) Before a lead agency accepts as complete an application for any development project which will be used by any person, the applicant shall consult the lists sent to the appropriate city or county and shall submit a signed statement to the local agency indicating whether the project and any alternatives are located on a site that is included on any of the lists compiled pursuant to this section and shall specify any list. If the site is included on a list, and the list is not specified on the statement, the lead agency shall notify the applicant pursuant to Section 65943. The statement shall read as follows:

HAZARDOUS WASTE AND SUBSTANCES STATEMENT

The development project and any alternatives proposed in this application are contained on the lists compiled pursuant to Section 65962.5 of the Government Code. Accordingly, the project applicant is required to submit a signed statement that contains the following information:

N T	C		1.
Name	οt	app	olicant:

Address:

Phone number:

Address of site (street name and number if available, and ZIP Code):

Local agency (city/county):

Assessor's book, page, and parcel number:

Specify any list pursuant to Section 65962.5 of the Government Code:

Regulatory identification number:

Date of list:	
Applicant.	Date

(g) The changes made to this section by the act amending this section, that takes effect January 1, 1992, apply only to projects for which applications have not been deemed complete on or before January 1, 1992, pursuant to Section 65943.

FORM 101 (3/2020) (page 8 of 8)

KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT

INSTRUCTIONS TO APPLICANT FILING FOR ZONE CHANGE

I. GENERAL INFORMATION

A request for change of a land use zone classification is a request to amend the official Ordinance Code of Kern County. As such, a request for change of zone must meet certain procedural and legislative requirements in order for an application to be accepted and processed.

IMPORTANT - INCOMPLETE APPLICATIONS WILL NOT BE ACCEPTED

A proposal for change of zone must be consistent with the land use designation that exists on the adopted elements of the applicable General or Specific Plan. An application for change of zone will not be processed if the request is inconsistent with the General Plan or an adopted specific plan.

A change of zone must comply with the provisions of the California Environmental Quality Act (CEQA), and findings must be made and/or documents prepared signifying the degree of potential environmental impact of a proposed change of zone prior to the commencement of public hearing. The degree of potential environmental impact of a project will be determined by the Department Staff after completing an initial review of the proposal. In addition to this application, information, materials, and filing fees may be required in order to conduct the CEQA Initial Study and prepare a CEQA document.

The Department will prepare a staff report and recommendation on the zone change request. The Kern County Planning Commission will consider the change of zone at a duly noticed and advertised public hearing. The Planning Commission's responsibility is to make a recommendation to the Kern County Board of Supervisors, after which another noticed and advertised public hearing is scheduled before the Board of Supervisors. The action of the Board of Supervisors is final.

II. APPLICATION INSTRUCTIONS

Please complete the application in its entirety. Please type all application information legibly.

- 1. **Plot Plan.** All applications must include a plot plan. The plot plan must meet the following minimum criteria:
 - a) Scale of the drawing and north point
 - b) The street address of the property and a vicinity map showing adjacent streets and other landmarks to assist in locating the property, distance and direction from the nearest road intersection, and any other identifying features
 - c) The location of all existing and proposed uses, structures, fences, signs, landscaping, and improvements
 - d) The location of all off-street parking and loading facilities, including driveways, individual parking and loading zones, points of ingress and egress, median strips, and traffic islands

FORM 101 (3/2020) (page 1 of 8)

- e) An elevation sketch of all existing and proposed signs, fences, and structures, including dimensions and heights above the ground
- f) Any other information which the applicant or the Director of the Department deems necessary for proper consideration of the application
- 2. **Environmental Assessment Form.** A fully complete and accurate Environmental Assessment Form (EAF) must be submitted with the application for change of zone. The EAF can be obtained from the Planning and NATURAL RESOURCES Department.
- 3. **Filing Fees.** A Preliminary Review fee of \$260 is required. Application for Zone Change fee is a \$2,000 deposit or flat fee. See the Land Development Services Fee Schedule for further information.

NOTE

The Department may charge additional fees on a time-and-material basis if the proposed project is such that the scope of Staff work required is beyond that normally associated with an application for change of zone. The applicant will be notified prior to implementation of such a fee structure for the project. The issuance of a receipt for filing fee signifies the start of the application process.

- 4. **Legal Description.** Submittal of a complete and accurate legal description is required. It is preferred that a copy be included as an electronic version in the Microsoft Word format.
- 5. **Other Materials or Data.** The Department may require such other materials, data, or reports as are determined necessary to conduct an appropriate analysis of the project.
- 6. **Optional Materials.** The applicant may submit statements, letters, or petitions in support of the request. Any other studies, reports, or materials pertaining to the request may also be submitted by the applicant.
- 7. **Processing Time.** Processing time is variable for each request. Processing time is dependent upon the degree of complexity of each case, the adequacy of information provided by the applicant, and the type of CEQA document required for the proposal. An estimate of the time required to achieve a hearing date can be given by the Department after conclusion of the Initial Study.
- 8. **Questions and Assistance.** Department Staff is available to answer questions or provide assistance in the preparation of an application for change of zone.

FORM 101 (3/2020) (page 2 of 8)

APPLICATION FOR ZONE CHANGE

KERN COUNTY PLANNING AND NATURAL RESOURCES DEPARTMENT 2700 "M" Street, Suite 100 Bakersfield, CA 93301

(661) 862-8600

1.	SECTION A - APPLICANT Name of Applicant: EDF Renewables
1.	Mailing Address 1999 Harrison Street, Suite 675
	City Oakland State CA Zip Code 94612
	Telephone: (510) 457-2168 Fax: (510) 457-2160 Email scott.kuhlke@edf-re.com
2.	Name of Individual Representative (if not same as above): Scott Kuhlke, Director
	Mailing Address (include Zip Code): Same as above
	Telephone: Fax: Email
	SECTION B - PROPERTY OWNER(S)
1.	Name of Current Record Property Owner(s) (if not same as above): See Attachment A: APN List (Zone Map 232)
	Mailing Address
	City State Zip Code
	Telephone: Fax: Email
2.	Approximate Date Interest in Property Was Acquired: Month/Year
	SECTION C – PROJECT DESCRIPTION
1.	Existing Site Zoning: Estate [E (10) RS MH FPS; E (5) RS FPS; E (2 1/2) RS FPS]
2.	Proposed Change of Zone: Exclusive Agriculture (A) and maintaining the existing environmental
	constraint overlay where applicable (see Attachment A: APN List, and Figure 15, Bullhead Zone Change Map).
3.	Exact Description of Proposed Project for Which Change of Zone is Sought: Development of up to 270 megawatts (MW) photovoltaic (PV) solar with up to 270 MW of battery storage on 1,349 acres, including PV panels, battery storage, generators, foundations, generation tie routes,
	transformers, substations, laydown yards, a meteorological tower, communication towers, and inverters. See attached Project Description for more details.
4.	Description of Private or Public Basic Need Infrastructure Services Available to Site:
	Sewage Disposal: N/A - portable restrooms will be used during construction. No operational component requires sewer.
	Domestic Water: See Project Description. To be purchased from local supplier.
	Site Access: See Figure 11, Project Access Routes.

FORM 101 (3/2020) (page 3 of 8)

	SECTION D - SITE LOCATION Zono Man 222, Son Attachment A: ARN List
Str	eet Address of Site (if available): Zone Map 232. See Attachment A: APN List.
De	scription of Site Location: The overall project site is approximately 12 miles southwest of State Route (SR) 58 and approximate
	niles east of Interstate 5. SR 14 is approximately 7 miles to the east and SR 138 is approximately 9 miles to the south. Specifically, the project s
with	nin Zone Map 232 is generally bound by Dawn Road to the north, 100th Street to the east, and Favorito Avenue to the sout
Co	mplete and Accurate Site Legal Description (attach additional pages as needed):
Se	ee Attachment B: Legal Descriptions.
Ass	sessor's Parcel Number(s): See Attachment A: APN List.
Sai	uare Footage or Acreage of Site: Approximately 1,349 acres total
	esent Land Use of Project Site: Vacant rural lands
110	sent Land Osc of Project Site.
Su	rounding Land Uses:
	rth - vacant and solar development
TNO	vecest calculations at varieties and veces
Fas	
Eas Soi	uth - vacant

SECTION E - BASIS OR EXPLANATION OF NEED FOR CHANGE OF ZONE

Pursuant to Sections 19.12.020 and 19.12.030 of Kern County Zoning Ordinance, solar facilities are permitted on areas zoned for Exclusive Agriculture (A) subject to a Conditional Use Permit. Therefore, the portions of the proposed project site within Zone Map 232 that are zoned Estate (E) are seeking a change of zone to the Exclusive Agriculture (A) zone district.

FORM 101 (3/2020) (page 4 of 8)

SECTION F - VERIFICATION STATEMENT

The California Legislature has passed a law that requires persons applying for development projects to review a listing of all hazardous waste sites. For a current list of the Hazardous Waste Sites, please go to the California Environmental Protection Agency website at: http://www.calepa.ca.gov/SiteCleanup/CorteseList/. If the site of your proposed development project is included on the list of hazardous waste sites, then it shall be so noted. Please note that if your proposed development project site is included on the Cortese list, the preparation of an environmental document will be required in conjunction with the project, per Section 65962.5. A copy of the law requiring this verification is attached for your reference. Please review the list of hazardous waste sites and sign the Verification Statement below.

(Review of list related to hazardous waste sites)

, EDF Renewables, as applicant for a development projection		
reviewed the lists of projects relating to haz Code. The proposed site (is) (is not) includ		
List (if applicable) 7 - (6 - 2 2 1	new Al-Ty teer is in dere, but a general with a real and a general with a real and a general with a real and a general and a gen	boon Wood
Date	Signature	
I hereby certify to the County of Ker applicant for this request and that I that this is a request to initiate a re commitment or opinion of the final	have read and understand the in equest for change of zone proces resolution of this request. Fee d attachments are appended to the	, am the instructions to applicant. I understand edures only and does not constitute a submitted are application filing fees is application, and the attachments and
Signature of Applicant	Date	1-16-2021
Signature of Property Owner of Rec	cord Date	

SECTION H - INDEMNIFICATION AGREEMENT

In consideration by the County of Kern of a permit for a land use approval project located at

Zone Map 232. See Attachment A: APN List, and Project Description

(address or general location)

I/We (identified below) agree to indemnify, defend, and hold harmless the County of Kern and its officers, agents, employees, departments, commissioners and boards ("County" herein) against any and all liability, claims, actions, causes of action or demands whatsoever against them, or any of them, before administrative or judicial tribunals of any kind whatsoever, in any way arising from, the Applicant's representations contained within this application, including without limitation any CEQA determination or any related development approvals or conditions, whether imposed by County or not, except for County's sole active negligence or willful misconduct.

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Applicant/Contact:

EDF Renewables

Signature

Date

(If the applicant is not an individual, the corporation name goes under "Print Name", authorized signature below it, and complete below.)

By:

Hanson Wood

Print Name

Title: Vice President - Development, West Region

IMPORTANT NOTE:

Original signatures of the applicant are required on this form for this application to be considered complete for processing.

OFFICE USE ONLY

Zone Change Case No		Zone Map No
Work Order No.		<u> </u>
FILING FEES		DESIGNATIONS
A. Zone Change	\$	S.D. No
B. EAF	\$	G.P. Designation
C	\$	S.P. Designation
D	\$	S.P. Title
TOTAL	\$	Floodplain
Receipt No.		Airport P.A
	AC	CCEPTANCE
Ву:		Date:
		A EVALUATION avironmental Assessment Form (EAF).
In acc		61(b)(3), it can be seen with certainty that this proposal will
Basis for Finding:		
		NOTES

FORM 101 (3/2020) (page 7 of 8)

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- (4) All sites listed pursuant to Section 25356 of the Health and Safety Code.
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- (1) All underground storage tanks for which an unauthorized release report is filed pursuant to Section 25295 of the Health and Safety Code.
- (2) All solid waste disposal facilities from which there is a migration of hazardous waste and for which a California regional water quality control board has notified the Department of Toxic Substances Control pursuant to subdivision (e) of Section 13273 of the Water Code.
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HAZARDOUS WASTE AND SUBSTANCES STATEMENT

The development project and any alternatives proposed in this application are contained on the lists compiled pursuant to Section 65962.5 of the Government Code. Accordingly, the project applicant is required to submit a signed statement that contains the following information:

3. T	C		1.	
Name	ot	app)lı	cant:

Address:

Phone number:

Address of site (street name and number if available, and ZIP Code):

Local agency (city/county):

Assessor's book, page, and parcel number:

Specify any list pursuant to Section 65962.5 of the Government Code:

Regulatory identification number:

Date of list:	
Applicant, Date	

(g) The changes made to this section by the act amending this section, that takes effect January 1, 1992, apply only to projects for which applications have not been deemed complete on or before January 1, 1992, pursuant to Section 65943.

FORM 101 (3/2020) (page 8 of 8)

Attachment 2

Kern County Agricultural Preserve—Petition for Exclusion (Form 104)

PETITION FOR EXCLUSION FROM, OR INCLUSION WITHIN, THE BOUNDARIES OF AN AGRICULTURAL PRESERVE

Date: August 2022

EDF	Renewables, petition the Kern County Board
Su	pervisors to [✓] exclude from [] include within the boundaries of Agricultural Preserve No. 24_ the
elow	r-described property:
•	Description of Property:
	Assessor's Parcel Number(s) (from latest tax bill): See Attachment A: APN List.
	Legal Description (attach additional sheets as needed):
	See Attachment B: Legal Descriptions.
	Total Acres 1,349 acres total, 841 acres within Agricultural Preserve No. 24
В.	Reasons for the Requested Action (attach additional sheets as needed):
	Exclusion of approximately 841 acres from Agricultural Preserve No. 24 located in the
	Willow Springs Specific Plan in order to develop 270 megawatts (MW) of solar photovoltaic (PV) capacity, up to 270 MW of battery storage, and various support
	facilities on approximately 1,349 acres. Refer to Bullhead Solar Project Farmland
	Report (August 2022).
	Present Land Use of the Property:
	Vacant rural lands
•	Proposed Future Land Use of the Property:
	Develop 270 MW of solar PV capacity, up to 270 MW of battery storage, and various support components on approximately 1.349 acres. Support components include PV panels, battery storage, generators

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communication towers, and inverters. See attached Project Description for more details.

foundations, generation tie routes, transformers, substations, laydown yards, a meteorological tower,

	process ship happens at the contract of the	for an black atoms		
E.	Present Zoning of Property:			
	This request is in conjunction with an Application for Zone Change			
	[/] Yes [] No Zone Applied For: Exclusive Agriculture (A)	Land A		
	Date Application Filed:	- 3702 12 178004		
F.	Land Use Contract:			
	This request is in conjunction with an application for a Land Use Contract:			
	[] Yes [/] No	Word: 7.16.204		
	(S	ignature)		
	1999 Harrison	Street, Suite 675		
	Oakland, CA 9	4612		
	M) was a second and	Mailing Address)		
G.	Indemnification Agreement:			
In co	onsideration by the County of Kern of a permit for a land use approval	project located at		
See Attacl	hment A: APN List. The project site is generally bound by Rosamond Boulevard to the south, Champagne Avenue to the north, 120th Street West t	to the west, and 80th Street West to the east.		
	(address or general location)	CC 4 Phring Come		

I/We (identified below) agree to indemnify, defend, and hold harmless the County of Kern and its officers, agents, employees, departments, commissioners and boards ("County" herein) against any and all liability, claims, actions, causes of action or demands whatsoever against them, or any of them, before administrative or judicial tribunals of any kind whatsoever, in any way arising from, the Applicant's representations contained within this application, including without limitation any CEQA determination or any related development approvals or conditions, whether imposed by County or not, except for County's sole active negligence or willful misconduct.

This indemnification agreement does not prevent the Applicant or property owner from challenging any decision by County related to this project and the obligations of this condition apply regardless of whether any other permits or entitlements are issued.

County will promptly notify Applicant and property owner (if different than Applicant) of any such claim, action, or proceeding, falling under this condition within thirty days of actually receiving such claim. County, in its sole discretion, shall be allowed to choose the attorney or outside law firm to defend County at the sole cost and expense of the Applicant and/or property owner, jointly and severally, and County is not obligated to use any law firm or attorney chosen by another entity or party.

Applicant/Contact:	(If the applicant is not an individual, the corporation							
EDF Renewables	name goes under "Print Name", authorized							
Print Name	signature below it, and complete below.)							
denter Mond	By: Hanson Wood							
J Signature,	Print Name							
7-16-221	Title: Vice President – Development, West Region							
Date	The second of th							
IMPORTANT NOTE:								
Original signatures of the applicant are required complete for processing.	on this form for this application to be considered							
complete for processing.								
NOTE: Return this petition and a filing fee of \$1	80 to:							
Kern County Planning and Natural Resources Department 2700 "M" Street, Suite 100 Bakersfield, CA 93301								
***** FOR OFFICE USE ONLY *****								
Name	APN # Map #							
Last First	Middle							
ZCC # Plnning Comm Hearing Date	Bd/Supvrs Hearing Date							
Existing Contract	Date							
Final Action Resolution #	Date							
	Date							
	Sup Dist							

Notes:

Appendix D.1: Air Quality and Greenhouse Gas Technical Report

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AIR QUALITY AND GREENHOUSE GAS TECHNICAL REPORT

BULLHEAD SOLAR PROJECT

PREPARED FOR:

EDF Renewables 1999 Harrison Street, Suite 675 Oakland, CA 94612

PREPARED BY:

ICF 49 Discovery, Suite 250 Irvine, CA 92618

April 2023



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Acronyms and Abbreviations

2017 Scoping Plan 2017 Climate Change Scoping Plan Update

°F degrees Fahrenheit

μg/m³ micrograms per cubic meter

AB Assembly Bill

AR4 IPCC Fourth Assessment Report BESS battery energy storage system

BigBeau Solar Project

CAA Clean Air Act

CAAQS
California Ambient Air Quality Standards
CalEEMod
CALGreen
Green Building Standards Code
CAMX
California-Mexico Power Area
CARB
CARB
CCAA
California Air Resources Board
CCAA
California Clean Air Act

CCR California Code of Regulations
CEC California Energy Commission
CEOA California Environmental Quality Act

CH₄ methane

 $\begin{array}{ccc} \text{CO} & \text{carbon monoxide} \\ \text{CO}_2 & \text{carbon dioxide} \end{array}$

CO₂e carbon dioxide equivalent

County County of Kern

CUP Conditional Use Permit
DPM diesel particulate matter

2022 Scoping Plan 2022 Scoping Plan for Achieving Carbon Neutrality

EDFR EDF Renewables

eGrid Emissions & Generation Resource Integrated Database

EKAPCD Eastern Kern Air Pollution Control District

EMFAC2021 Emission Factor Model EO Executive Order

EPA Environmental Protection Agency

gen-tie generation-tie GHG greenhouse gas

GWP global warming potential

HC hydrocarbons
HFC hydrofluorocarbon

IPCC Intergovernmental Panel on Climate Change

IRP integrated resource plan
LCFS low-carbon fuel standard
LED light-emitting diode
LOS level of service

MDAB Mojave Desert Air Basin

mph miles per hour

MTCO₂e metric tons of carbon dioxide equivalent

 $\begin{array}{ll} \text{MW} & \text{megawatts} \\ \text{MWh} & \text{MW hour} \\ \text{N}_2\text{O} & \text{nitrous oxide} \end{array}$

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NAAQS National Ambient Air Quality Standards

NHTSA National Highway Traffic Safety Administration

NO nitric oxide NO_2 nitrogen dioxide nitrogen oxides NOx

0&M operations and maintenance

03 ozone

ОЕННА Office of Environmental Health Hazard Assessment

Pb lead

PFCs perfluorinated carbons PM particulate matter

 PM_{10} particles with an aerodynamic diameter of 10 micrometers or less particles with an aerodynamic diameter of 2.5 micrometers or less $PM_{2.5}$

parts per million ppm project BigBeau Solar Project

PV photovoltaic PVC polyvinyl chloride ROG reactive organic gases

RPS Renewables Portfolio Standard RTP Regional Transportation Plan **SAFE** Safer Affordable Fuel-Efficient

SB Senate Bill

SCAQMD South Coast Air Quality Management District

Southern California Edison SCE

SCS Sustainable Communities Strategy

 SF_6 sulfur hexafluoride Significant Impact Level SIL SIP State Implementation Plan

SIVAPCD San Joaquin Valley Air Pollution Control District

sea-level rise SLR SO_2 sulfur dioxide sulfur oxides SO_X

TACs toxic air contaminants

TRTP Tehachapi Renewable Transmission Project

VOC volatile organic compound

April 2023

This report is provided to support the County of Kern (County) environmental review process and includes information regarding potential effects of air quality and greenhouse gas (GHG) emissions associated with the proposed Bullhead Solar Project (project). The analysis provided in this report evaluates the potential for short- and long-term air quality, health risk, and GHG impacts associated with construction and operation of the project. The analysis includes a description of the environmental setting for the proposed project, including existing air quality and GHG conditions, as well as applicable laws and regulations, and documents the assumptions, methodologies, and findings used to evaluate the impacts. The report was prepared in accordance with the Eastern Kern Air Pollution Control District's (EKAPCD) *Guidelines for Implementation of the California Environmental Quality Act* (1996, amended 1999) and the Kern County Planning and Natural Resources Department's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports* (2006).

1.1 Project Description Summary

EDF Renewables (EDFR) proposes the Bullhead Solar Project (project) to develop up to 270 megawatts (MW) (alternating current or "AC") of solar photovoltaic (PV) capacity derived from tracker technology and up to 270 MW of battery storage. The project includes solar development with associated PV panels, inverters, converters, generators, foundations, transformers, and preferred and optional generation-tie (gen-tie) routes to the Rosamond Switching Station and the Whirlwind Substation, only one of which would be constructed. The project also includes laydown yards, a meteorological station, a microwave/ communication tower, and a substation.

The proposed project encompasses a study area of approximately 1,359.50 acres of private land (Figure 1-1, Study Area). A larger study area has been provided for evaluation to ensure that all lands potentially affected by the proposed project are included in the analysis. Should the Kern County (County) Board of Supervisors approve the project, then the County would issue Conditional Use Permits (CUPs) and other required approvals on land proposed for development of the solar facilities. The portion of the project subject to CUPs is 1,349.50 acres; 10 acres are excluded from the CUP boundary, but are included in the CEQA Study Area boundary for purposes of environmental analysis.

As shown on Figure 1-2, Conceptual Site Plan, secondary access to the Bullhead site is provided via 120th Street West through the approved and adjacent BigBeau Solar Project (BigBeau). Approximately 422.4 acres of land permitted in connection with BigBeau will be developed around the same time as the proposed project, and those facilities will use the same interconnection infrastructure as the proposed project. The County Board of Supervisors approved BigBeau and certified an EIR for the project in June 2020. The environmental effects of developing on those lands were evaluated in the BigBeau Solar Project EIR (SCH # 2019071059), which is hereby incorporated by reference. EDFR will comply with all mitigation measures and conditions of approval applicable to BigBeau for any development those lands.

As shown on Figure 1-1 and Figure 1-2, the project's study area consists of a solar array area with three locations under consideration for the development of a substation. CUPs are required for the solar generation facilities (e.g., the panels) and associated generation equipment (i.e., inverters, substation, and batteries), as well as the communications tower. Therefore, these facilities will be located within the CUP boundary (1,349.50 acres). Several other project components do not require CUPs and would extend beyond the CUP boundary (but would be entirely within the study area). These components include access roads and gen-tie power lines (both collection and transmission). Figure 1-2 shows the project components.

EDFR is committed to creating a state-of-the-art solar energy project that would be constructed in a manner that minimizes environmental impacts to the greatest extent feasible. The proposed project includes four options for gen-tie routes, including two deviations to one option and one deviation to another. Only one route would be constructed. Three project optional gen-tie routes—Rosamond Gen-tie Options 1, 2, and 3, including one deviation identified as Rosamond Gen-tie Option 3.1— would travel south from the project boundary and connect to the Rosamond Switching Station. The Rosamond Switching Station is planned to be constructed by Los Angeles Department of Water and Power by December 2025. One optional project gen-tie route—Whirlwind Gen-tie Option 1, including two deviation routes identified as Whirlwind Gen-tie Option 1.1 and Whirlwind Gen-tie Option 1.2—would cross underneath Southern California Edison's (SCE) Tehachapi Renewable Transmission Project (TRTP) to the east of the project site and connect to the existing Whirlwind Substation. SCE's TRTP 220/500-kilovolt (kV) corridor travels through Whirlwind Gen-tie Option 1 and connects SCE's Vincent Substation with SCE's Windhub Substation to the south and north of the project site, respectively. Many of the lands surrounding the site have either been approved for, or are in the planning stages of, development for solar or wind energy.

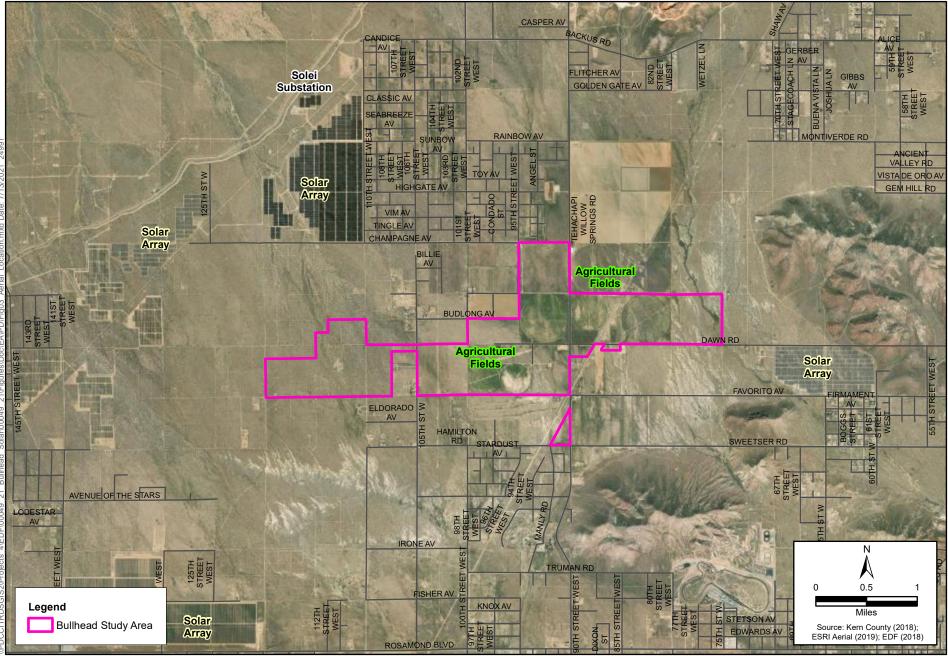




Figure 1-1
Project Site Aerial Location Map
Bullhead Solar

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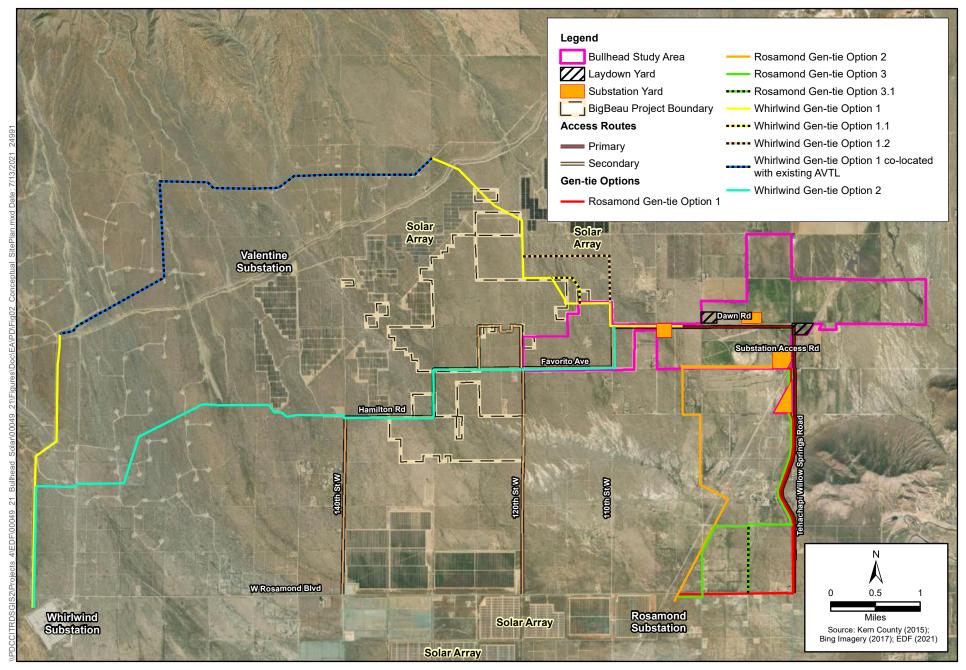




Figure 1-2 Conceptual Site Plan Bullhead Solar

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1.1.1 Proposed Construction Activities

Construction of the proposed project would take up to approximately 18 months. Construction would be comparable to that of other renewable energy projects and can be divided into the following components: (1) moving of equipment onto the site; (2) site preparation and grading; (3) access road improvements, if needed; (4) gen-tie line construction; (5) internal roads construction; (6) electrical substation and microwave tower construction; (7) solar array structural, underground, and panel installation and battery storage construction; (8) PV and battery storage commission; and (9) project finalization/commercial operation. The various elements of the proposed project would be constructed concurrently on the property. Construction is anticipated to commence in the third quarter of 2024. Onsite workforce is expected to average 201 workers per day, with a peak of up to 627 workers.

Construction employees may be able to carpool from respective population centers, such as Tehachapi and Rosamond, and report to the designated construction staging yards prior to the beginning of each work day. One or more of the proposed laydown yards may be used as a parking and meeting area for the construction employees and would be reclaimed after substantial completion of the project is reached. It is anticipated that the employees would use Rosamond Boulevard, Tehachapi Willow Springs, and 120th Street West as points of ingress/egress to the property and that, once on site, they would access various sections via the existing and improved network of dirt roads. Employees may also access the site through the adjacent BigBeau Solar Project, owned and operated by EDFR.

Construction would primarily occur during daylight hours, Monday through Friday, between 6:00 a.m. and 5:00 p.m. The proposed project would be constructed by several specialized construction contractors, with construction activities taking place as specified in the County's Code of Ordinances, Chapter 8.36, as required to meet the construction schedule. Construction activities are allowable between the hours of 6:00 a.m. and 9:00 p.m. on weekdays and between the hours of 8:00 a.m. and 9:00 p.m. on weekends.

Construction of the proposed project may include improvements to existing offsite access roads to the proposed project site, as required by the County. Revegetation of disturbed areas, temporary roadways, and equipment laydown sites that are not required as part of the ongoing operation of the facility also would be revegetated, as appropriate. Staging areas may be required for material handling, temporary storage, and other staging activities.

Construction activities would be expected to include site preparation, fencing, mowing, excavation, grading, trenching/underground work, pile driving, system installation, testing, and cleanup. Site preparation and proposed project site construction would be in accordance with all federal, state, and Kern County zoning codes and requirements. Noise-generating construction activities would be limited to the construction hours noted above. All stationary equipment and machines with the potential to generate a significant increase in noise or vibration levels would be located away from noise receptors to the extent practicable. The contractor would conduct construction activities in such a manner that the maximum noise levels at the affected buildings would not exceed established noise levels.

All applicable federal, state, and local requirements and best management practices would be incorporated into the construction activities for the proposed project site. The construction contractor would be required to incorporate best management practices consistent with the Kern County zoning ordinance and with guidelines provided in the *Stormwater Best Management Practice*

Handbook: Construction, including the preparation of a Stormwater Pollution Prevention Plan and a Soil Erosion and Sedimentation Control Plan, in order to reduce potential impacts related to construction of the proposed project.

It is anticipated that the construction period would begin in the third quarter of 2024 to minimize effects on sensitive species and habitats and would be completed approximately 18 months later. As the construction period would continue into the winter season, supplemental erosion measures may need to be implemented, including, but not limited to, the following:

- Mulching
- Geotextiles and mats
- Earthen dikes
- Temporary drains and gullies
- Silt fence
- Straw bale barriers
- Sandbag barrier
- Brush or rock filter
- Sediment trap

Construction equipment would be turned off when not in use. The construction contractor would ensure that all construction and grading equipment is properly maintained. All vehicles and compressors would use exhaust mufflers and engine enclosure covers (as designed by the manufacturer) at all times.

During construction, water is anticipated to be supplied by well water. This local groundwater is suitable as a primary supply for soil compaction and dust control, but may not be suitable for potable use.

1.1.2 Proposed Operations Activities

On completion of the construction and testing phases, the proposed project would be operated on an unstaffed basis and monitored remotely. Periodically, personnel would visit the site for inspection, security, maintenance, and system-monitoring purposes. Up to approximately 15 part-time and/or full-time staff would operate the facility at the adjacent BigBeau Operations and Maintenance (O&M) building. The proposed project staff would use the O&M facility west and immediately adjacent to the project site at BigBeau. The nearby BigBeau O&M building would house the proposed project's electronic controls and communications systems; provide storage for tools, maintenance supplies, and spare parts; and provide onsite office, kitchen, and bathroom facilities for operations staff. Effective facility operations would include, but not be limited to, the following.

- Liaison and remote monitoring
- Administration and reporting
- Semi-annual and annual services
- Remote operations of inverters
- Site security and management

- Additional communication protocol
- Repair and maintenance of solar facilities, substation, microwave tower, and other project facilities

• Periodic (i.e., up to once per year) panel washing.

The proposed project would be fenced to help prevent access by the public. Gates would be installed at the roads entering the proposed project site. Limiting access to the project site would be necessary both to ensure the safety of the public and protect the equipment from potential theft and vandalism.

The proposed PV arrays produce electricity passively, with minimal maintenance requirements. It is anticipated that panels would be washed once per year, using the same well water source as during the construction phase or water from a local purveyor. It is anticipated that water used during panel washing would not be suitable for potable use. The maintenance program would be largely conducted on site during daytime hours as a safety precaution. Equipment repairs may take place in the early morning or evening, when the plant is producing the least amount of energy. Program elements include:

- Responding to plant failures and emergencies in a timely manner
- Maintaining and managing a prequalified group of maintenance and repair firms that can address the O&M needs of the facility
- Creating a cleaning schedule to be more responsive to location and type of installation
- Maintaining an inventory of spare parts to facilitate timely repairs to maintain plant output
- Using trouble-ticketing to effectively record, track, and escalate all maintenance problems
- Conducting onsite maintenance, as required, to clear weeds, grass, and groundcover for ground-mount systems (if specified ground-mount technology is chosen)

Limited amounts of hazardous materials would be stored or used on the site during operations; these materials may include diesel fuel, gasoline and motor oil for vehicles, mineral oil to be sealed within the transformers, and lead acid-based and/or lithium-ion batteries for emergency backup. Appropriate spill containment and cleanup kits would be maintained during project operations.

Additionally, the proposed project would produce a small amount of hazardous waste associated with maintenance activities, which could include broken and rusted metal, defective or malfunctioning modules, electrical materials, unused paint, solvents, cleaners, waste oil, oily rags, and batteries. Workers would be trained to properly identify and handle all hazardous wastes. Hazardous waste would be either recycled or disposed of at a permitted and licensed treatment and/or disposal facility. All hazardous waste shipped off site for recycling or disposal would be transported by a licensed and permitted hazardous waste hauler and disposed of at an approved location.

1.2 Nearby Land Uses and Sensitive Receptors

Sensitive receptors are defined as locations where pollutant-sensitive members of the population may reside or where the presence of air pollutant emissions could affect use of the land adversely. Sensitive members of the population include those who may be affected more negatively by poor air quality than other members of the population, such as children, the elderly, or the infirm. In general, residential areas, hospitals, daycare facilities, elder-care facilities, elementary schools, and parks typically contain a high concentration of these sensitive population groups (CARB 2005).

The proposed project is in an area of low population density and traversed by a network of dirt roads. Land uses surrounding the project site currently include sparsely distributed residential dwellings to the immediate north, south, and center. Existing sensitive receptors include residential dwellings scattered around the perimeter of the project site at various distances from the project site boundary. There are approximately 55 residential/nonresidential uses within a quarter mile of the proposed project footprint that are of concern for air quality. Of these 55 uses, eight are currently unoccupied. Refer to Appendix A for the complete residential survey map of these nearby residential uses¹. This report analyzed the project's regional impacts and the localized air quality impacts that may affect these nearby occupied residential uses.

Air Quality Technical Report

Bullhead Solar Project

1-10

April 2023
104036.0.002

¹ Field work was conducted and four of the residential/nonresident uses originally shown in Appendix A were noted to not exist anymore and were removed from the Appendix. The ID numbers removed were 27, 28, 35, and 55.

2.1 Existing Setting

2.1.1 Topography and Meteorology

Air quality is a function of both the rate and location of pollutant emissions under meteorological conditions and topographic features that influence pollutant movement and dispersal. Atmospheric conditions such as wind speed, wind direction, atmospheric stability, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, which affects air quality.

The proposed project is located entirely within the Mojave Desert Air Basin (MDAB) and within the jurisdiction of EKAPCD. The MDAB is an assemblage of mountain ranges interspersed with long, broad valleys that often contain dry lakes. Many of the lower mountains that dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor. Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada mountains to the north; air masses pushed onshore in southern California by differential heating are channeled through the MDAB. The MDAB is separated from the southern California coastal and central California valley regions by mountains (highest elevation is approximately 10,000 feet), the passes of which form the main channels for these air masses. The Antelope Valley is bordered on the northwest by the Tehachapi Mountains, separated from the Sierra Nevada Mountains in the north by the Tehachapi Pass (3,800 feet elevation). The Antelope Valley is bordered in the south by the San Gabriel Mountains, bisected by Soledad Canyon (3,300 feet). The Mojave Desert is bordered in the southwest by the San Bernardino Mountains, separated from the San Gabriel mountain range by the Cajon Pass (4,200 feet). A lesser channel lies between the San Bernardino Mountains and the Little San Bernardino Mountains (the Morongo Valley) (MDAQMD 2016).

During the summer, the MDAB is generally influenced by a Pacific subtropical high cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, because these frontal systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist, and unstable air masses from the south. The MDAB averages between 3 and 7 inches of precipitation per year (from 16 to 30 days with at least 0.01 inch of precipitation). The MDAB is classified as a dry-hot desert climate, with portions classified as dry-very hot desert, indicating at least 3 months have maximum average temperatures over 100.4 degrees Fahrenheit (°F) (MDAQMD 2016). Most of the MDAB is sparsely populated and produces very few human-made pollutants, although dust can become airborne under high wind conditions.

2.1.2 Criteria Air Pollutants

For the protection of public health and welfare, the federal Clean Air Act (CAA) requires that the U.S. Environmental Protection Agency (EPA) establish National Ambient Air Quality Standards (NAAQS) for various pollutants. These pollutants are referred to as *criteria* pollutants. Similarly, the California

Clean Air Act (CCAA) requires the California Air Resources Board (CARB) to set standards and designate areas as either attainment or nonattainment, based on whether the California Ambient Air Quality Standards (CAAQS) have been achieved. NAAQS and CAAQS define the maximum amount of an air pollutant that can be present in ambient air without harming public health. An *ambient air quality standard* is generally specified as a concentration averaged over a specific time period, such as 1 hour, 8 hours, 24 hours, or 1 year. The different averaging times and concentrations are meant to protect against different exposure effects. Standards established for the protection of human health are referred to as *primary standards*, whereas standards established for the prevention of environmental and property damage are called *secondary standards*. The CAA allows states to adopt additional or more health-protective standards. The air quality regulatory framework and ambient air quality standards are discussed in greater detail later in this report.

The following provides a summary discussion of the primary and secondary criteria air pollutants of primary concern. In general, primary pollutants are directly emitted into the atmosphere, and secondary pollutants are formed by chemical reactions in the atmosphere.

Ozone

Ozone (O_3) , which is the main ingredient in urban smog, is not emitted directly into the air, but created by chemical reactions between hydrocarbons (HC) and nitrogen oxides (NO_X) both byproducts of the internal combustion engine) in the presence of sunlight. Reactive organic gases (ROG) are defined by CARB and include all HC except those exempted by CARB, that contribute to smog formation, whereas volatile organic compounds (VOCs) are defined by EPA and include all HCs except those exempted by EPA. Generally speaking, ROGs and VOCs are similar, but not identical, and their terms are used interchangeably; this analysis uses the term ROG. There are no separate ambient air quality standards for ROGs. Carcinogenic forms of ROG are toxic air contaminants (TACs), which are described below. An example is benzene.

ROG are compounds made up primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of HCs. Other sources of ROG are emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of certain household consumer products, such as aerosols.

The two major forms of NO_X are nitric oxide (NO) and nitrogen dioxide (NO₂). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature or high pressure. NO_2 is a reddish-brown irritating gas formed by the combination of NO and oxygen. In addition to serving as an integral participant in O_3 formation, NO_X also directly acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens.

 O_3 poses a higher risk to those who already suffer from respiratory diseases (e.g., asthma), children, older adults, and people who are active outdoors. Exposure to O_3 at certain concentrations can make breathing more difficult, cause shortness of breath and coughing, inflame and damage the airways, aggregate lung diseases, increase the frequency of asthma attacks, and cause chronic obstructive pulmonary disease. Studies show associations between short-term O_3 exposure and nonaccidental mortality, including deaths from respiratory issues. Studies also suggest that long-term exposure to O_3 may increase the risk of respiratory-related deaths (EPA 2019a). The concentration of O_3 at which health effects are observed depends on an individual's sensitivity, level of exertion (i.e., breathing rate), and duration of exposure. Studies show large individual differences in the intensity of symptomatic responses, with one study finding no symptoms to the least responsive individual

after a 2-hour exposure to 400 parts per billion of O_3 and a 50 percent decrement in forced airway volume in the most responsive individual. Although results vary, evidence suggests that sensitive populations (e.g., asthmatics) may be affected on days when the 8-hour maximum O_3 concentration reaches 80 parts per billion (EPA 2019b).

In addition to human health effect, O_3 has been tied to crop damage, typically in the form of stunted growth, leaf discoloration, cell damage, and premature death. O_3 can also act as a corrosive and oxidant, resulting in property damage like degradation of rubber products and other materials.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is considered a local pollutant because it tends to accumulate in the air locally. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation. Exposure to CO at high concentrations can also cause fatigue, headaches, confusion, dizziness, and chest pain. There are no ecological or environmental effects of ambient CO (CARB 2019a).

Particulate Matter

Particulate matter (PM) consists of finely divided solids or liquids, such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized—respirable course particles with an aerodynamic diameter of 10 micrometers or less (PM $_{10}$), and respirable fine particles with an aerodynamic diameter of 2.5 micrometers or less (PM $_{2.5}$). Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind on arid landscapes also contributes substantially to local particulate loading. PM is considered both a local and regional pollutant.

Particulate pollution can be transported over long distances and may adversely affect humans, especially people who are naturally sensitive or susceptible to breathing problems. Numerous studies have linked PM exposure to premature death in people with preexisting heart or lung disease. Other symptoms of exposure may include nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms. Depending on its composition, both PM_{10} and $PM_{2.5}$ can also affect water quality and acidity, deplete soil nutrients, damage sensitive forests and crops, affect ecosystem diversity, and contribute to acid rain (EPA 2019c).

Sulfur Dioxide

Sulfur dioxide (SO_2) is a colorless, irritating gas with a "rotten egg" smell, primarily formed from the combustion of fossil fuels containing sulfur. SO_2 is considered a local pollutant because it tends to accumulate in the air locally. High concentrations of SO_2 can result in temporary breathing impairment for asthmatic children, as well as adults who are active outdoors. Short-term exposures of asthmatic individuals to elevated SO_2 levels during moderate activity may result in breathing difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other effects that have been associated with longer-term exposures to high concentrations of SO_2 , in conjunction with high levels of PM, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in lung defenses. SO_2 also is a major precursor to $PM_{2.5}$, which is a

significant health concern and a main contributor to poor visibility (see also the discussion of health effects of PM).

Lead

Lead (Pb) is a naturally existing metal that can be a constituent of air, water, and the biosphere. Pb is considered a local pollutant because it tends to accumulate in the air locally. Unfortunately, this highly toxic metal has been used for many years in everyday products and has been found to lead to a range of health effects, from behavioral problems and learning disabilities to seizures and death. Effects on the nervous systems of children are one of the primary health risk concerns from Pb. In high concentrations, children can even suffer irreversible brain damage and death. Children 6 years old and under are most at risk because their bodies are growing quickly.

Since the 1980s, Pb has been phased out in gasoline, reduced in drinking water, reduced in industrial air pollution, and banned or limited in consumer products. Gasoline-powered automobile engines were a major source of airborne Pb through the use of leaded fuels; however, the use of leaded fuel has been mostly phased out. Since this has occurred, the ambient lead levels have dropped dramatically. EKAPCD no longer monitors ambient levels of atmospheric Pb in the MDAB.

Other "Criteria" Pollutants

CARB has also established CAAQS for hydrogen sulfide, sulfates, vinyl chloride, and visibility-reducing particles. These pollutants are not addressed by federal standards. Below is a summary of these pollutants and a description of the pollutants' physical properties, health and other effects, sources, and the extent of the problems associated with each.

- **Hydrogen sulfide** emissions often are associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. Hydrogen sulfide in the atmosphere will likely oxidize into SO₂, which can lead to acid rain. At low concentrations, hydrogen sulfide may cause irritation to the eyes, mucous membranes, and respiratory system, dizziness, and headaches. In high concentrations (800 parts per million [ppm] can cause death), hydrogen sulfide is extremely hazardous, especially in enclosed spaces. The Occupational Safety and Health Administration has the primary responsibility for regulating workplace exposure to hydrogen sulfide.
- **Sulfates** are another particulate product that comes from the combustion of sulfur-containing fossil fuels; however, the majority of ambient sulfates is formed in the atmosphere. When sulfur oxides (SO_X) or SO₂ come in contact with oxygen, it precipitates out into sulfates. Data collected in the MDAB has demonstrated that levels of sulfates within MDAB are significantly less than the ambient air quality standards limit. The health effects associated with SO₂ and sulfates, more commonly known as SO_X, include respiratory illnesses, decreased pulmonary disease resistance, and aggravation of cardiovascular diseases. When acidic pollutants and particulates are also present, SO₂ tends to have an even more toxic effect.

Increased particulate matter derived from SO_2 emissions also contributes to impaired visibility. In addition to particulates, SO_3 and SO_4 are also precursors to acid rain; SO_X and NO_X are the leading precursors. Acid rain can lead to corrosion of human-made structures and cause acidification of water bodies.

Visibility-reducing particles are criteria pollutants; however, California has been labeled
unclassified for visibility-reducing particles because CARB has not established a method for
measuring visibility with the precision and accuracy needed to designate areas attainment or
nonattainment.

• **Vinyl chloride** is a sweet-smelling, colorless gas at ambient temperature. Landfills, publicly owned treatment works, and polyvinyl chloride (PVC) production are the major identified sources of vinyl chloride emissions in California. PVC can be fabricated into several products, such as PVC pipes, pipe fittings, and plastics. In humans, epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers.

2.1.3 Odors

Rules or regulations for the control of odors have not been established at the state or federal level. However, although EKAPCD does not have a specific rule or regulation to address odors, Rule 419, *Nuisance*, forbids the discharge of air contaminants that cause nuisance or annoyance to any considerable number of persons or to the public. Odors are typically addressed only when there are citizen complaints to local governments or EKAPCD.

2.1.4 Toxic Air Contaminants

Hazardous air pollutants is an EPA term that includes a variety of pollutants generated or emitted by industrial production activities. Termed TACs by CARB under the CCAA, 10 such pollutants have been identified through ambient air quality data as being the most substantial health risk in California: diesel particulate matter (DPM), 1,3-butadiene, benzene, carbon tetrachloride, formaldehyde, hexavalent chromium, para-dichlorobenzene, acetaldehyde, perchloroethylene, and methylene chloride. Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to the brain and nervous system, and respiratory disorders.

Because no safe levels of TACs can be determined, there are no air quality standards for TACs. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. The requirements of the Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill [AB] 2588) apply to facilities that use, produce, or emit toxic chemicals. Facilities that are subject to AB 2588's toxic emission inventory requirements must prepare and submit toxic emission inventory plans and reports and periodically update those reports. In addition to TACs, asbestos and valley fever are pollutants of concern in the project area, as discussed below.

Diesel Particulate Matter

Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material. The solid material in diesel exhaust is known as DPM. More than 90 percent of DPM is less than 1 micrometer in diameter (about $1/70^{th}$ the diameter of a human hair), and thus is a subset of PM_{2.5}. Most PM_{2.5} derives from combustion, such as use of gasoline and diesel fuels by motor vehicles, burning of natural gas to generate electricity, and wood burning. PM_{2.5} is the size of ambient particulate matter air pollution most associated with adverse health effects of the air pollutants that have ambient air quality standards. These health effects include cardiovascular and respiratory hospitalizations and premature death. As a California statewide average, DPM comprises about

8 percent of $PM_{2.5}$ in outdoor air, although DPM levels vary regionally due to the nonuniform distribution of sources throughout the state (CARB 2019b).

DPM is typically composed of carbon particles (i.e., soot, also called black carbon) and numerous organic compounds, including more than 40 known cancer-causing organic substances. Examples of these chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene. Diesel exhaust also contains gaseous pollutants, including volatile organic compounds and NO_X . Diesel engine NO_X emissions are notable because they can undergo chemical reactions in the atmosphere that lead to the formation of $PM_{2.5}$ and O_3 (CARB 2019b).

Most major sources of diesel emissions, such as ships, trains, and trucks, operate in and around ports, rail yards, and heavily traveled roadways. These areas often are located near highly populated areas. Because of this, elevated DPM levels are mainly an urban problem, wherein larger numbers of people are exposed to higher DPM concentrations, resulting in greater health consequences in urban areas compared to rural areas. A large fraction of personal exposure to DPM occurs during travel on roadways. Although Californians spend a relatively small proportion of their time in enclosed vehicles (about 7 percent for adults and teenagers and 4 percent for children under 12), 30 to 55 percent of total daily DPM exposure typically occurs during the time people spend in motor vehicles (CARB 2019b).

DPM has a significant impact on California's population. It is estimated that about 70 percent of total known cancer risk related to air toxics in California is attributable to DPM. Based on 2012 estimates of statewide exposure, DPM is estimated to increase statewide cancer risk by 520 cancers per million residents exposed over a lifetime. Non-cancer health effects associated with exposure to DPM (based on 2009–2011 air quality data) include the following annually (values are estimated): 1,400 cardiopulmonary deaths, 100 cardiovascular hospitalizations, 120 respiratory hospitalizations, and 600 respiratory emergency room visits (including for asthma). In 1998, based on published evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects, CARB identified DPM as a TAC (CARB 2019b).

Asbestos

Asbestos can only adversely affect humans in its fibrous form; to do so, these fibers must be broken and dispersed into the air and then inhaled. During geological processes, the asbestos mineral can be crushed, causing it to become airborne. It also enters the air or water from the breakdown of natural deposits. Constant exposure to asbestos at high levels on a regular basis may cause cancer in humans. The two most common forms of cancer due to asbestos exposure are lung cancer and mesothelioma, a rare cancer of the lining that covers the lungs and stomach (EPA 2018).

Ultramafic, serpentinized rock is closely associated with asbestos and is chemically composed of the following minerals:

• Antigorite; (Mg, Fe) 3Si2O5(OH)4

Clinochrysotile; Mg3Si2O5(OH)4

Lizardite; Mg3Si2O5(OH)4

Orthrochrysotile; Mg3Si2O5(OH)4

Parachrsotile; (Mg, Fe)3Si2O5(OH)4

Chrysotile minerals are more likely to form serpentinite asbestos; however, serpentinite is uncommon to sedimentary soil found in the project area. Asbestos occurs in certain geologic environments not common to the project study area.

2.1.5 Valley Fever

Coccidioidomycosis, more commonly known as "Valley Fever," is primarily a disease of the lungs caused by the spores of the *Coccidioides immitis* fungus. The spores are found in soils, become airborne when the soil is disturbed, and subsequently are inhaled into human lungs. After the fungal spores have settled in the lungs, they change into a multicelluar structure called a *spherule*. Fungal growth in the lungs occurs as the spherule grows and bursts, releasing endospores, which then develop into more spherules.

Valley Fever symptoms occur within 2 to 3 weeks of exposure. Approximately 60 percent of Valley Fever cases are mild and display flu-like symptoms or no symptoms at all. Of those who are exposed and seek medical treatment, the most common symptoms include fatigue, cough, loss of appetite, rash, headache, and joint aches. In some cases, painful red bumps may develop. However, these symptoms are not unique to Valley Fever and may be caused by other illnesses, as well. Identifying and confirming this diseases requires specific laboratory tests such as: (1) microscopic identification of the fungal spherules in infected tissue, sputum, or body fluid sample; (2) growing a culture of Coccidioides immitis from a tissue specimen, sputum, or body fluid; (3) detection of antibodies (serological tests specifically for Valley Fever) against the fungus in blood serum or other body fluids; and (4) administering the Valley Fever Skin Test (called *coccidioidin* or *spherulin*), which indicates prior exposure to the fungus (Valley Fever Center for Excellence 2018).

Valley Fever is not contagious. Most of those who are infected will recover without treatment within 6 months and will have a lifelong immunity to the fungal spores. In severe cases, such as patients with rapid and extensive primary illnesses, antifungal drug therapy is used for those who are at risk for dissemination (i.e., spreading) of disease and those who have disseminated disease. Only 1 to 2 percent of those exposed who seek medical attention will develop a disease that disseminates to parts of the body other than the lungs. Approximately 60 percent of Valley Fever cases are mild, and no medical treatment is sought. Table 2-1 presents the various infection classifications and normal diagnostic spread as noted in recent research conducted by the Valley Fever Center for Excellence.

Table 2-1. Range of Valley Fever Cases

Infection Classification	Percent of Total Diagnosed Cases
Unapparent infections	60 percent
Mild to moderate infections	30 percent
Infections resulting in complications	5–10 percent
Fatal infections	<1 percent

Source: Valley Fever Center for Excellence 2018.

Factors that affect the susceptibility to coccidioidal dissemination are race, sex, pregnancy, age, and immunosuppression. Residents new to the San Joaquin Valley are at a higher risk of infection, primarily due to low natural immunity to this particular fungus. Many long-time residents exposed to Valley Fever have recovered, therefore developing a lifelong immunity to the disease.

The *Coccidioides immitis* fungal spores are often found in the soil around rodent burrows, Native American ruins, and burial grounds. The spores become airborne when the soil is disturbed by winds, construction, farming, and other soil-disturbing activities. This type of fungus is endemic to the southwestern United States and more common in Kern County. The ecological factors that appear to be most conducive to the survival and replication of the fungal spores are high summer temperatures, mild winters, sparse rainfall, and alkaline, sandy soils.

2.1.6 Ambient Air Quality

Several monitoring stations in the MDAB measure ambient air pollutant concentrations. The Mojave–Poole Street (Kern County) and Victorville–Park Avenue (San Bernardino County) monitoring sites are the closest stations to the project site, approximately 12 and 61 miles away, respectively. The Mojave-Poole station monitors ambient concentrations of O_3 , PM_{10} , and $PM_{2.5}$, whereas the Victorville–Park Avenue station monitors those pollutants and CO, NO_2 , and SO_2 . Due to its proximity to the project site, the Mojave-Poole station data is used to summarize ambient concentrations of O_3 , PM_{10} , and $PM_{2.5}$ near the project site, whereas Victorville-Park Avenue data is used to summarize ambient concentrations of CO, CO, and CO, CO, CO, and CO, a

Table 2-2. Summary of Ambient Air Quality Monitoring Data

Pollutant	2017	2018	2019	2020
1-Hour Ozone (O ₃)				
Maximum Concentration (ppm)	0.097	0.111	0.085	0.108
Number of Days Standard Exceeded				
CAAQS 1-hour (>0.09 ppm)	1	8	0	5
8-Hour Ozone (0 ₃)				
State Maximum Concentration (ppm)	0.086	0.095	0.078	0.101
National Maximum Concentration (ppm)	0.085	0.094	0.077	0.100
National 4th Highest Concentration (ppm)	0.080	0.091	0.074	0.093
Number of days standard exceeded				
CAAQS 8-hour (>0.070 ppm)	37	56	10	16
NAAQS 8-hour (>0.070 ppm)	35	53	10	15
Carbon Monoxide (CO)				
Maximum Concentration 8-hour Period (ppm)	1.2	1.1	1.1	1.4
Number of days standard exceeded				
NAAQS 8-hour (≥9 ppm)	0	0	0	0
CAAQS 8-hour (≥9 ppm)	0	0	0	0
Nitrogen Dioxide (NO ₂)				
Maximum 1-hour Concentration (ppm)	0.057	0.051	0.056	0.059
Annual Average Concentration (ppm)	0.012	0.011	0.011	0.012
Number of Days Standard Exceeded				
CAAQS 1-Hour (>0.18 ppm)	0	0	0	0
NAAQS 1-Hour (>0.100 ppm)	0	0	0	0
CAAQS Annual (>0.030 ppm)	0	0	0	0
NAAQS Annual (>0.053 ppm)	0	0	0	0

Pollutant	2017	2018	2019	2020
Respirable Particulate Matter (PM ₁₀)				
State Maximum 24-hour Concentration	85.7	86.5	240.8	99.0
National Maximum 24-hour Concentration	93.4	93.1	248.7	111.9
State Annual Average Concentration (CAAQS = $20 \mu g/m^3$)	*	*	22.0	*
Number of Days Standard Exceeded				
CAAQS 24-hour (>50 µg/m³)	10	19	15	8
CAAQS Annual Mean (>20 μg/m³)	*	*	*	*
NAAQS 24-hour (>150 μg/m³)–Estimated Days	*	*	2	0
Fine Particulate Matter (PM _{2.5})				
National Maximum 24-hour Concentration (µg/m³)	26.9	39.0	19.8	72.8
24-hour Standard 98th Percentile (µg/m³)	16.6	25.9	14.3	32.9
National Annual Average Concentration (NAAQS = $12 \mu g/m^3$)	5.5	7.1	6.5	8.4
State Annual Average Concentration (CAAQS = 12 μ g/m ³)	*	*	6.5	*
Number of Days Standard Exceeded				
CAAQS Annual Mean (> 12 μg/m³)	0	0	0	*
NAAQS Annual Mean (> 12 μg/m³)	0	0	0	*
NAAQS 24-Hour (>35 μg/m³)	0	2	0	4
Sulfur Dioxide (SO ₂)				
Maximum 1-hour Concentration (ppb)	28.3	9.9	4.3	3.6
24-hour Concentration (ppb)	1.9	2.7	3.4	2.2
Number of Days Standard Exceeded				
CAAQS 24-Hour (>40 ppb)	0	0	0	0
CAAQS 1-Hour (>250 ppb)	0	0	0	0
NAAQS 24-Hour (>140 ppb)	0	0	0	0
NAAQS 1-Hour (>75 ppb)	0	0	0	0

Sources: CARB 2019c; EPA 2019d. Data compiled by ICF.

Note: an exceedance does not necessarily equal a violation.

CAAQS = California Ambient Air Quality Standards; NAAQS = National Ambient Air Quality Standards; ppb = parts per billion; ppm = parts per million; μ g/m³ = micrograms per cubic meter; * = insufficient data.

The CAA requires EPA to designate areas within the country as either attainment or nonattainment for each criteria pollutant based on whether NAAQS have been achieved. Similarly, the CCAA requires CARB to designate areas within California as either attainment or nonattainment for each criteria pollutant based on whether CAAQS have been achieved. If a pollutant concentration is lower than the state or federal standard, then the area is classified as being in *attainment* for that pollutant. If a pollutant concentration violates the standard, then the area is considered a *nonattainment* area. If data are insufficient to determine whether a pollutant is violating the standard, then the area is designated *unclassified*. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data show that a state standard for the pollutant was violated at least once during the previous 3 calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a state standard, nor used as a basis

for designating areas as nonattainment. The attainment status of EKAPCD is summarized in Table 2-3. CAAQS and NAAQS represent concentration limits of criteria air pollutants needed to adequately protect human health and the environment. Existing violations of the O_3 and PM_{10} ambient air quality standards indicate that certain individuals exposed to this pollutant may experience certain health effects, including increased incidence of acute and chronic cardiovascular and respiratory ailments.

Table 2-3. Federal and State Attainment Status for EKAPCD

Criteria Pollutant	Federal Designation ¹	State Designation
Ozone (O ₃) (8-hour)	Serious Nonattainment ²	Nonattainment
Carbon Monoxide (CO)	Unclassifiable/Attainment	Unclassified
Respirable Particulate Matter (PM ₁₀)	Unclassifiable/Attainment	Nonattainment
Fine Particulate Matter (PM _{2.5})	Unclassifiable/Attainment	Unclassified
Nitrogen Dioxide (NO ₂)	Unclassified	Attainment
Sulfur Dioxide (SO ₂)	Unclassified	Attainment
Lead (Pb)	Unclassifiable/Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen Sulfide	(No federal standard)	Unclassified
Vinyl Chloride	(No federal standard)	NA^3
Visibility	(No federal standard)	Unclassified

Sources: EKAPCD 2018: CARB 2018a.

EKAPCD = Eastern Kern Air Pollution Control District

2.2 Regulatory Framework

2.2.1 Federal

Federal Clean Air Act

The CAA was first enacted in 1963 and has been amended numerous times in subsequent years (1967, 1970, 1977, and 1990). The CAA establishes NAAQS and specifies future dates for achieving compliance. The CAA also mandates that each state submit and implement a State Implementation Plan (SIP) for local areas not meeting those standards. The plans must include pollution control measures that demonstrate how the standards will be met. Because the project site is within EKAPCD, it is in an area designated as nonattainment for certain pollutants regulated under the CAA.

The 1990 amendments to the CAA identify specific emission-reduction goals for areas not meeting NAAQS. These amendments require both a demonstration of reasonable progress toward attainment and the incorporation of additional sanctions for failure to attain or meet interim milestones. CAA sections that would most affect the development of the proposed project substantially include Title I (Nonattainment Provisions) and Title II (Mobile-Source Provisions).

¹ At the time of designation, if the available data do not support a designation of attainment or nonattainment, the area is designated as unclassifiable.

² Serious nonattainment status is for the 2008 NAAQS (0.075ppm; expected to attain in 2020); the region is designated attainment for the 1997 8-hour ozone NAAQS (0.08 ppm).

³ CARB has not designated an attainment status for vinyl chloride.

Title I provisions were established with the goal of attaining NAAQS for criteria pollutants. Table 2-4 shows NAAQS currently in effect for each criteria pollutant. NAAQS were amended in July 1997 to include an 8-hour standard for O_3 and adopt a standard for $PM_{2.5}$. The 8-hour O_3 NAAQS were further amended in October 2015.

Table 2-4. Federal and State Ambient Air Quality Standards

- 0.070 ppm - 150 μg/m³ 12 μg/m³ 35 μg/m³ 35 ppm 9 ppm -
- 150 μg/m ³ 12 μg/m ³ 1 35 μg/m ³ 35 ppm
12 μg/m³ I 35 μg/m³ 35 ppm
12 μg/m³ I 35 μg/m³ 35 ppm
1 35 μg/m³ 35 ppm
35 ppm
9 ppm -
_
0.053 ppm
0.100 ppm
0.03 ppm
0.14 ppm
_
0.75 ppm
-
1.5 μg/m³
0.15 μg/m³
No Federal Standard
No Federal Standard
No Federal Standard

Source: EKAPCD 2018.

Emission Standards for Non-Road Diesel Engines

To reduce emissions from nonroad diesel equipment, EPA established a series of increasingly strict emission standards for new nonroad diesel engines. Tier 1 standards were phased in on newly manufactured equipment from 1996 through 2000, depending on the engine horsepower category. Tier 2 standards were phased in on newly manufactured equipment from 2001 through 2006. Tier 3 standards were phased in on newly manufactured equipment from 2006 through 2008. Tier 4

¹ National standards are divided into primary and secondary standards. *Primary standards* are intended to protect public health, whereas *secondary standards* are intended to protect public welfare and the environment. Only primary standards are shown here.

ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.

standards, which require advanced emission-control technology, were phased in from 2008 through 2015.

Emission Standards for Heavy-Duty Vehicles

EPA has established a series of increasingly strict emission standards for new heavy-duty bus and truck engines. Emissions from heavy-duty trucks are managed by regulations and emission limits implemented at the federal, state, and local levels. In December 2000, EPA signed the Heavy-Duty Highway Rule, which reduces emissions from on-road, heavy-duty diesel trucks by establishing a series of increasingly strict emission standards for new engines. Manufacturers were required to produce new diesel vehicles that meet particulate matter and NO_X emission standards beginning with model year 2007, with the phase-in period being between 2007 and 2010, according to a percentage-of-sales basis: 50 percent from 2007 to 2009 and 100 percent in 2010. Requirements apply to engines installed in all vehicles with Gross Vehicle Weight Rating above 14,000 pounds and some engines installed in vehicles with Gross Vehicle Weight Rating between 8,500 and 14,000 pounds (EPA 2019e).

2.2.2 State

California Clean Air Act

The CCAA, signed into law in 1988, requires all areas of the state to achieve and maintain CAAQS by the earliest practical date. CAAQS incorporate additional standards for most of the criteria pollutants and set standards for other pollutants the state recognizes. In general, CAAQS are more health-protective than the corresponding NAAQS. California has also set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Table 2-4 shows CAAQS currently in effect for each criteria pollutant.

CARB and local air districts bear responsibility for achieving California's air quality standards, which are to be accomplished through district-level air quality management plans incorporated into the SIP. In California, EPA has delegated authority to prepare SIPs to CARB, which, in turn, has delegated that authority to individual air districts. CARB traditionally has established state air quality standards, maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, developing air emission inventories, collecting air quality and meteorological data, and approving SIPs.

The CCAA substantially adds to the authority and responsibilities of air districts. The CCAA designates air districts as lead air quality-planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures. The CCAA also emphasizes the control of "indirect and area-wide sources" of air pollutant emissions. The CCAA gives local air pollution control districts explicit authority to regulate indirect sources of air pollution and establish traffic control measures.

Toxic Air Contaminants Regulations

California regulates TACs primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588). AB 1807 created California's program to reduce exposure to air toxics. AB 2588 supplements the AB 1807 program by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to

reduce these risks. The California Office of Environmental Health Hazard Assessment (OEHHA) is required to develop guidelines for health risk assessments under AB 2588. These guidelines provide the scientific basis for the values used to assess the risk of emissions exposure from facilities and new sources (OEHHA 2015). Additional information on the health risk assessment is provided in Section 2.3.2, *Methodology*.

In August 1998, CARB identified particulate emissions from diesel-fueled engines as TACs. In September 2000, CARB approved a comprehensive diesel risk-reduction plan to reduce emissions from both new and existing diesel-fueled engines and vehicles. An ongoing process, CARB reviews air contaminants and identifies those that are classified as TACs. CARB also continues to establish new programs and regulations for the control of TACs, including DPM, as appropriate.

2.2.3 Regional

Eastern Kern County Air Pollution Control District

The proposed project is located within an area of Kern County that is under the jurisdiction of EKAPCD. EKAPCD regulates air pollutant emissions for all sources throughout the portion of the MDAB that falls within Kern County other than motor vehicles and enforces regulations and administers permits governing stationary sources (CARB 2018b). The following rules and regulations would apply to the proposed project:

Rule 201: Permits Required. This rule outlines the permitting requirements for projects with new or modified equipment. EKAPCD requires that all commercial solar power plants obtain a District Air permit due to their generation of fugitive dust emissions.

Rule 210.1: New and Modified Stationary Source Review. The purpose of this rule is to provide a period of preconstruction review of new projects to ensure that emissions will not prohibit attainment of air quality standards, ensure use of Best Available Control Technologies, and ensure there will be no significant increase in emissions of nonattainment pollutants and their precursors.

Rule 210.5: Visibility Protection. This rule requires that the Air Pollution Control Officer withhold an Authority to Construct for any new major stationary source that would have the potential to emit significant amounts of NO_X , SO_2 , or PM, unless analysis concludes that an adverse impact on visibility would not occur.

Rule 402: Fugitive Dust. The purpose of this rule is to reduce the amount of PM₁₀ emitted from significant human-made fugitive dust sources in an amount sufficient to maintain NAAQS. The rule applies to bulk storage, earthmoving, construction and demolition, and human-made conditions resulting in wind erosion. According to the requirements of this rule, no person shall cause or allow emissions of fugitive dust to remain visible beyond the property line of the emissions sources and, for any large operations, requires that a person shall not cause or allow downwind PM₁₀ concentrations to increase more than 50 micrograms per cubic meter above upwind concentrations. This rule requires any Large Operation to submit a Fugitive Dust Emission Control Plan prior to the start of any activities. This rule defines a *Large Operation* as any construction activity on any site involving 10 or more contiguous acres of disturbed surface area or any earthmoving activity exceeding a daily volume of 10,000 cubic yards or relocating more than 2,500 cubic yards per day of bulk materials at least 3 days per year.

Rule 419: Nuisance. This rule prohibits the discharge of air contaminants or other materials in such quantities that may cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public.

Rule 423: National Emission Standards for Hazardous Air Pollutants and Source (NESHAPS).

This rule incorporates and adopts the provisions of Title 40, Chapter I, Parts 61 and 63, Code of Federal Regulations (October 10, 2017) by reference. Sources of hazardous air pollution within the district are required to comply with the applicable standards, criteria, and requirements of the Title 40 regulation.

EKAPCD originally published its Ozone Air Quality Management Plan in 1991; in 1994 this plan was amended to reflect findings showing that there were no self-generated exceedances of O₃ CAAQS in EKAPCD; rather, all exceedances occurred during transport days. In February 2008, EKAPCD submitted *Early Progress Plans Demonstrating Progress Toward Attaining the 8-hour NAAQS for Ozone*, demonstrating that the district had made significant progress toward achieving the 1997 8-hour standard (CARB 2018c). In 2012, EPA determined that EKAPCD was among seven areas in California that attained the 1997 O₃ NAAQS (EPA 2012a).

In 2008, EPA adopted more stringent 8-hour O_3 NAAQS of 0.075 ppm, and EKAPCD was classified as moderate nonattainment in June 2016. As a moderate O_3 nonattainment area, EKAPCD is required to adopt retrofit Reasonably Available Control Technology rules for all sources of O_3 precursor emissions. In May 2017, the board adopted EKAPCD's *Draft Reasonably Available Control Technology SIP* for the 2008 O_3 NAAQS, which demonstrates compliance with control requirements for the 2008 O_3 standard (EKAPCD 2017b). EKAPCD's latest Ozone Attainment Plan was adopted in July 2017 and addresses all required elements, emissions reductions, and control measures necessary to demonstrate attainment with the 2008 8-hour O_3 NAAQS by 2020 (EKAPCD 2017a).

Kern County General Plan

The *Kern County General Plan* was adopted in 2004 and last amended on September 22, 2009. The General Plan includes several elements that aim to accommodate future growth and development in an intentional approach. Elements relevant to the proposed project include *Land Use, Conservation, and Open Space–Air Quality* and *Energy* (Kern County Department of Planning and Development Services 2009). The policies and implementation measures that are applicable to the proposed project are outlined below. Note that only applicable policies and implementation measures are included here; those policies and implementation measures that are not applicable are not included.

Land Use, Conservation, and Open Space Element-Air Quality

Goals

Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services.

Policies

Policy 18: The air quality implications of new discretionary land use proposals shall be considered in approval of major developments. Special emphasis will be placed on minimizing air quality degradation in the desert to enable effective military operations and in the valley region to meet attainment goals.

Policy 19: In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision-making body, as part of its deliberations, will ensure that:

- All feasible mitigation to reduce significant adverse air quality impacts have been adopted;
 and
- b. The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.

Policy 20: The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District on ministerial permits.

Policy 21: The County shall support air districts efforts to reduce PM₁₀ and PM_{2.5} emissions.

Policy 22: Kern County shall continue to work with the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District toward air quality attainment with federal, state, and local standards.

Implementation Measures

- F. All discretionary permits shall be referred to the appropriate air district for review and comment.
- G. Discretionary development projects involving the use of tractor-trailer rigs shall incorporate diesel exhaust reduction strategies including, but not limited to:
 - a. Minimizing idling time.
 - b. Electrical overnight plug-ins.
- H. Discretionary projects may use one or more of the following to reduce air quality effects:
 - a. Pave dirt roads within the development.
 - b. Pave outside storage areas.
 - c. Provide additional low Volatile Organic Compounds (VOC) producing trees on landscape plans.
 - d. Use of alternative fuel fleet vehicles or hybrid vehicles.
 - e. Use of emission control devices on diesel equipment.
 - f. Develop residential neighborhoods without fireplaces or with the use of
 - g. Environmental Protection Agency certified, low emission natural gas fireplaces.
 - h. Provide bicycle lockers and shower facilities on site.
 - i. Increasing the amount of landscaping beyond what is required in the Zoning
 - j. Ordinance (Chapter 19.86).
 - $k. \quad \text{The use and development of park and ride facilities in outlying areas.} \\$
 - l. Other strategies that may be recommended by the local Air Pollution Control Districts.
- J. The County should include PM_{10} control measures as conditions of approval for subdivision maps, site plans, and grading permits.

Willow Springs Specific Plan

The project area also encompasses 518 acres of Kern County's *Willow Springs Specific Plan* area. The plan was adopted in April 2008 and contains goals, policies, and standards compatible with those in the *Kern County General Plan*, but are unique to the specific needs of the Willow Springs area. The air quality-related policies and measures contained in the *Willow Springs Specific Plan* that are applicable to the proposed project are outlined below (Kern County Department of Planning and Development Services 2008). Note that only applicable goals, policies, and standards are included here; those goals, policies, and standards that are not applicable are not included.

Air Quality Element

Goal

Imposition of appropriate mitigation measures to reduce where practical to do so, the effect short-term and long-term projects have on the area which involve grading activities, erosion controls, revegetation of disturbed sites, and provisions to introduce into the plan area a competitive job market to reduce travel times.

Policies

(1) Compliance with the Mitigation/Implementation Measures and enactment of an approved Air Quality Attainment Plan.

Mitigation/Implementation Measures

- (1) To mitigate potential dust generation impacts, the Willow Springs Specific Plan Update project shall comply with applicable County regulations (to the satisfaction of the Kern County Air Pollution Control District), which require specific dust control measures.
- (2) During construction, all grading activities shall be ceased during periods of high winds (i.e., greater than 30 miles per hour [mph]). To assure compliance with this measure, grading activities are subject to periodic inspections by County staff.
- (3) Construction equipment shall be fitted with the most modern emission control devices and be kept in proper tune. Motors out of proper tune can result in emissions that vastly exceed recommended standards.
- (4) The project applicants shall, to the extent feasible, implement applicable control measures contained in the Attainment Plan in effect at the time of adoption of this Specific Plan, by the Air Pollution Control District in 1991.
- (5) Energy conservation practices, as required by the Subdivision Map Act, Building Energy Efficiency Standards (California Energy Commission 1988), and State and local laws, shall be incorporated into the design of the individual projects to have the secondary effect of limiting stationary source pollutants both on- and offsite. These standards address insulation and instruction to the original homeowners addressing glazing (window) type shading, heating/cooling system type, thermostats, lighting, water heating equipment, etc.
- (6) As stated in the Draft Attainment Plan, low NO_X water heaters with a NO_X emissions limit of 2.3 pounds per year per unit shall be installed in all new residential development.
- (7) All phases of the Willow Springs Specific Plan Update project shall comply with applicable rules and regulations of the Kern County Air Pollution Control District.

2.3 Impacts and Mitigation Measures

2.3.1 Thresholds of Significance

Appendix G of the CEQA Guidelines outlines the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the significance determinations. Both EKAPCD and the Kern County Planning Department have developed guidelines to assist with the preparation of the air quality assessments in CEQA documents. The Kern County CEQA Implementation Document and Kern County Environmental Checklist includes items taken from previous versions of Appendix G of the CEQA Guidelines. However, Appendix G was updated in 2018, resulting in minor changes to the checklist items. The analysis herein is based on the updated CEQA Guidelines, which differ slightly from the Kern County CEQA Implementation Document and Kern County Environmental Checklist. The current CEQA Guidelines state that a project would have a significant impact on air quality if it would:

- (A) Conflict with or obstruct implementation of the applicable air quality plan (**Impact AQ-1**);
- (B) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (Impact AQ-2);
- (C) Expose sensitive receptors to substantial pollutant concentrations (Impact AQ-3); and
- (D) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people (**Impact AQ-4**).

Supplemental Thresholds

Regional Thresholds

As previously indicated, the State CEQA Guidelines state that the significance criteria established by the applicable air quality management or air pollution control district may be relied on to make the significance determination of whether a project would violate or impede attainment of air quality standards. Attainment status for each pollutant is assigned for the entire air basin. In the MDAB, the attainment designations apply to all areas of the MDAB, including East Kern County (see 17 California Code of Regulations [CCR] 60109). Therefore, the current attainment status for the entire MDAB, which includes nonattainment status for O_3 NAAQS, O_3 CAAQS, and PM_{10} CAAQS, applies to the entire air basin.

EKAPCD guidance (EKAPCD 1996, amended 1999) states that a project would not have a significant air quality impact on the environment if it results in the following during proposed project operations:

- For emission sources subject to EKAPCD Rule 201, result in emissions below the offsets trigger levels set forth in Subsection III.B.3. of EKAPCD's Rule 210.1 (New and Modified Source Review Rule). Those thresholds, which apply to stationary permitted sources in nonattainment areas, are as follows:
 - \circ PM₁₀ 15 tons per year
 - SO_X 27 tons per year

- o ROG 25 tons per year
- \circ NO_X 25 tons per year

 \circ Emit fewer than 137 pounds per day of NO_X or ROG from motor vehicle trips (indirect sources only)

Kern County Planning Department published guidance (County of Kern 2006) to assist with the preparation of the air quality assessments and to ensure that the assumptions and methodology used in the environmental documents are uniform from one project to the next. This guidance recommends that projects in Kern County analyze short-term construction and long-term operational project- and cumulative-level air quality impacts using the above annual EKAPCD thresholds (in tons per year). Note that Kern County Planning Department guidelines do not recommend separate analysis of indirect (energy emissions) sources at the daily (pounds per day) time scale. Based on discussions with EKAPCD staff, it was recommended that this analysis utilize the thresholds from the Kern County Planning Department guidance (Stephens pers. comm. 2019). Therefore, the analysis is based on annual (calendar year) emissions only, and these thresholds are applied to both short-term construction and long-term operations.

Health-Based Thresholds for Project-Generated Pollutants of Human Health Concern

The California Supreme Court's decision in *Sierra Club v. County of Fresno* (6 Cal. 5th 502) (hereafter referred to as the Friant Ranch Decision) reviewed the long-term, regional air quality analysis contained in the environmental impact report for the proposed Community Plan Update and *Friant Ranch Specific Plan*. The *Friant Ranch Specific Plan* project is a 942-acre master-plan development in unincorporated Fresno County within the San Joaquin Valley Air Basin, an air basin currently in nonattainment under NAAQS and CAAQS for O₃ and PM_{2.5}. The Court found that the environmental impact report's air quality analysis was inadequate because it failed to provide enough detail "for the public to translate the bare [criteria pollutant emissions] numbers provided into adverse health impacts or to understand why such a translation is not possible at this time." The Court's decision clarifies that environmental documents must attempt to connect a project's air quality impacts to specific health effects or explain why it is not technically feasible to perform such an analysis.

As discussed in Section 2.1, *Existing Setting*, all criteria pollutants that would be generated by the proposed project are associated with some form of health risk (e.g., asthma, lower respiratory problems). Criteria pollutants can be classified as either regional or localized pollutants. *Regional pollutants* can be transported over long distances and affect ambient air quality far from the emissions source. *Localized pollutants* affect ambient air quality near the emissions source. O_3 is considered a regional criteria pollutant, whereas CO, NO_2 , SO_2 , and Pb are localized pollutants. PM can be both a local and a regional pollutant, depending on its composition. As discussed above, the primary criteria pollutants of concern generated by the project are O_3 precursors (ROG and NO_X), CO, SO_X , and PM (including DPM), because EKAPCD and Kern County Planning Department have developed numerical thresholds for these pollutants.

Regional Project-Generated Criteria Pollutants (Ozone Precursors and Regional PM)

Adverse health effects induced by regional criteria pollutant emissions generated by the project (O_3 precursors and PM) are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, the number and

character of exposed individuals [e.g., age, gender]). For these reasons, O₃ precursors (ROG and NO_X) contribute to the formation of groundborne O₃ on a regional scale. Emissions of ROG and NO_X generated in one area may not equate to a specific O_3 concentration in that same area. Similarly, some types of particulate pollutant may be transported over long-distances or formed through atmospheric reactions. As such, the magnitude and locations of specific health effects from exposure to increased O₃ or regional PM concentrations are the product of emissions generated by numerous sources throughout a region, as opposed to a single individual project.

Models and tools have been developed to correlate regional criteria pollutant emissions to potential community health impacts. Although there are models capable of quantifying O₃ and secondary PM formation and associated health effects, these tools were developed to support regional planning and policy analysis and have limited sensitivity to small changes in criteria pollutant concentrations that individual projects induce. Therefore, translating project-generated criteria pollutants to the locations where specific health effects could occur or the resultant number of additional days of nonattainment is not possible with any degree of accuracy.

Technical limitations of existing models to correlate project-level regional emissions to specific health consequences are recognized by air quality management districts throughout the state, including the San Joaquin Valley Air Pollution Control District (SJVAPCD) and South Coast Air Quality Management District (SCAQMD), who provided amici curiae briefs for the Friant Ranch legal proceedings.² In its brief, SIVAPCD acknowledged that although health risk assessments for localized air toxics, such as DPM, are commonly prepared, "it is not feasible to conduct a similar analysis for criteria air pollutants because currently available computer modeling tools are not equipped for this task." SJVAPCD further notes that emissions solely from the Friant Ranch Specific Plan project (which equate to less than one-tenth of one percent of the total NO_X and VOC in the Valley) are not likely to yield valid information and that any such information should not be "accurate when applied at the local level." SCAQMD (2015) presents similar information in their brief, stating that "it takes a large amount of additional precursor emissions to cause a modeled increase in ambient ozone levels."3)

As discussed above, air districts develop region-specific CEQA thresholds of significance in consideration of existing air quality concentrations and attainment designations under NAAQS and CAAQS, which are informed by a wide range of scientific evidence that demonstrates there are known safe concentrations of criteria pollutants. While recognizing that air quality is cumulative problem, air districts typically consider projects that generate criteria pollutant and O₃ precursor emissions below these thresholds to be minor in nature and thus would not adversely affect air quality such that NAAQS or CAAQS would be exceeded. Emissions generated by the project could increase photochemical reactions and the formation of tropospheric O₃ and secondary PM, which, at certain concentrations, could lead to increased incidence of specific health consequences. Although these health effects are associated with O_3 and particulate pollution, the effects are a result of cumulative and regional emissions. Thus, the project's incremental contribution cannot be-traced to specific health outcomes on a regional scale, and a quantitative correlation of project-generated regional criteria pollutant emissions to specific human health impacts is not included in this

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² The amicus curiae briefs for Friant Ranch are available at: www.courts.ca.gov/41312.htm.

³ For example, SCAOMD's analysis of its 2012 Air Quality Attainment Plan showed that modeled NO_X and ROG reductions of 432 and 187 tons per day, respectively, only reduced O₃ levels by 9 parts per billion. Analysis of SCAQMD's Rule 1315 showed that emissions of NO_x and ROG of 6,620 and 89,180 pounds per day, respectively, contributed to 20 premature deaths per year and 89,947 school absence (SCAQMD 2015).

analysis. All feasible mitigation is being applied to reduce construction- and operations-generated emissions of O₃ precursors and PM to the extent possible. Refer to **Impact AQ-2** for a discussion of project-generated emissions and cumulative impacts and a description of feasible mitigation.

Localized Project-Generated Criteria Pollutants (PM and CO) and Air Toxics (DPM)

Localized pollutants generated by a project are deposited and potentially affect populations near the emissions source. Because these pollutants dissipate with distance, emissions from individual projects can result in direct and material health impacts on adjacent sensitive receptors. Models and thresholds are readily available to quantify these potential health effects and evaluate their significance. Locally adopted thresholds and analysis procedures for the localized pollutants of concern associated with the proposed project ($PM_{10}/PM_{2.5}$, DPM, CO, and naturally occurring asbestos) are identified below.

Localized PM₁₀ and PM_{2.5}

The Kern County Planning Department requires projects to estimate the maximum 24-hour average concentration of PM₁₀ and PM_{2.5} at the project boundary and compare concentrations to the appropriate NAAQS, CAAQS, Kern County CEQA thresholds, and the applicable threshold from EKAPCD or SJVAPCD. The project area is considered a nonattainment area for PM₁₀ and PM_{2.5} CAAQS, which are more restrictive than the NAAQS. The Kern County Planning Department has not adopted a threshold for areas that exceed CAAQS or NAAQS. The SJVAPCD recommends EPA Significant Impact Level (SIL) values for areas that exceed NAAQS or CAAQS (SJVAPCD 2019). SIL values are amounts EPA considers to be a significant contribution in an area that exceeds air quality standards without the project. EPA SIL values used in the analysis are as follows:

- An incremental increase in 24-hour PM₁₀ of 5 micrograms per cubic meter (μg/m³), or
- An incremental increase in 24-hour PM_{2.5} of 1.2 μg/m³.

Diesel Particulate Matter

EKAPCD requires that projects do not exceed the District health risk public notification thresholds adopted by the Kern County Air Pollution Control District Board. Based on EKAPCD reporting per AB 2588 (EKAPCD 2020), EKAPCD's public notification thresholds are as follows:

- 1. A cancer risk exceeding 10 in 1 million, or
- 2. A ratio of the chronic or acute exposure to the reference exposure level ("hazard index") exceeding 1.0.

Carbon Monoxide Hot-Spots

Heavy traffic congestion can contribute to high levels of CO. Individuals exposed to these CO "hotspots" may have a greater likelihood of developing adverse health effects (as described in Section 2.1, *Existing Setting*). The potential for the proposed project to result in localized CO impacts at intersections resulting from addition of its traffic volumes is assessed based on Kern County's suggested criteria, which recommends performing a localized CO impact analysis for intersections operating at or below level of service (LOS) E (County of Kern 2006). Projects that do not generate CO concentrations in excess of the health-based CAAQS or NAAQS would not contribute a significant level of CO such that localized air quality and human health would be substantially degraded.

Naturally Occurring Asbestos

There are no quantitative thresholds related to receptor exposure to asbestos. However, EKAPCD Rule 423 (National Emission Standards for Hazardous Air Pollutants and Source Categories) requires all projects to comply with the provisions of Title 40, Chapter I, Parts 61 and 63 of the Code of Federal Regulations.

2.3.2 Methodology

Air pollutant emissions would occur from both construction and operation of the new solar facility at the project site. The proposed project's construction activities would generate temporary air pollutant emissions from the use of off-road mobile equipment and combustion-powered tools at the project site, as well as construction-related worker, vendor truck, concrete truck, and haul truck trips at the project site and traveling to and from it. Once constructed, air pollutant emissions would result from facility maintenance and include worker trips, vendor truck trips, annual water truck trips, and power-washer operation. The change in air pollutant emissions generated by the proposed project relative to baseline conditions has been estimated and compared with the applicable air quality thresholds of significance recommended by EKAPCD.

Short-term Construction-generated Emissions

Construction of the proposed project would generate emissions of ROG, NO_X , CO, SO_X , PM_{10} , and $PM_{2.5}$ that could result in short-term air quality effects during the construction period. Emissions would originate from off-road equipment exhaust, employee and haul truck vehicle exhaust (onroad vehicles), and fugitive dust from site grading and earth movement.

Emissions were estimated using a combination of emission factors and methodologies from the California Emissions Estimator Model (CalEEMod), version 2020.4.0 (CAPCOA 2021), CalEEMod version 2022.1 (CAPCOA 2022), CARB's EMission FACtor Model (EMFAC2021) model, and EPA's AP-42 *Compilation of Air Pollutant Emission Factors* (EPA 2006) based on project-specific construction data (e.g., schedule, equipment, truck volumes) provided by the project applicant. See Appendix B for a complete list of construction assumptions, including equipment and vehicles. Details regarding the methods and activity assumptions by source type are provided below.

- Off-Road Equipment: Off-road equipment would be required for several construction activities, including demolition, grading, and structure construction. Emission factors for off-road construction equipment (e.g., loaders, graders, bulldozers) were obtained from the CalEEMod (version 2022.1) User's Guide appendix, which provides values per unit of activity (in grams per horsepower-hour) by calendar year. Criteria pollutants were estimated by multiplying the CalEEMod emission factors by the equipment inventory and activity assumptions (e.g., horsepower, hours of use per day) provided by the project applicant.
- On-Road Vehicles: On-road vehicles (e.g., pickup trucks, flatbed trucks, passenger vehicles) would be required for material deliveries to the project site, material and equipment hauling within the project site, onsite crew and material movement, and employee commuting. Exhaust emissions from on-road vehicles were estimated using the EMFAC2021 emissions model and activity data (miles traveled per day) provided by the project applicant. Emission factors for haul trucks are based on aggregated-speed emission rates for EMFAC's T7 Single Construction vehicle category. Emission factors for water trucks are based on aggregated-speed emission rates for EMFAC's T6 Instate Heavy vehicle category. According to the 2022 Traffic Investigation

for Proposed Bullhead Solar Project in Rosamond, CA by Ruettgers & Schuler Civil Engineer (Traffic Impact Analysis) (2022), approximately 155 vendor trips per day would be required for delivery of equipment and materials, including the solar panels for installation, for the duration of project construction. Per the project applicant, the average trip length for vendor and material delivery trips from local and nonlocal sources is approximately 55 miles and includes approximately 0.25 mile of onsite unpaved road travel.

Water trucks would be required for several construction phases to provide fugitive dust control, with as many as 12 trucks expected on a given day.⁴ According to the Water Supply Assessment prepared for the project, potential locations for water supply are located less than 5 miles and 6 miles south of the project site (ICF 2022). Additionally, there are onsite wells that the project may use to source all of the needed water supply for project-construction. However, for the purposes of providing a conservative analysis, a worst-case scenario was modeled with all necessary water coming from offsite. A one-way trip distance of 6 miles (combination of paved and unpaved roads) was assumed for delivery of water during construction. In total, the project would have a combined 167 heavy duty truck trips between the vendor trips and water trucks, consistent with Table 1a of the Traffic Impact Analysis.

Emission factors for employee commute vehicles are based on a weighted average for all vehicle speeds for EMFAC's Light-Duty Automobile/Light-Duty Truck vehicle categories. Per the Traffic Impact Analysis, the average construction day would consist of 201 one-way employee commute trips based on an 18-month construction schedule. However, as the construction emissions analysis uses a conservative 12-month construction schedule (described further herein), the employee commute trips were increased to an average of 302 one-way trips per day to accommodate the reduced schedule. Approximately fifty percent of construction personnel are anticipated to be hired from the local area, which includes the cities of Lancaster, Rosamond, and Mojave. It is anticipated that approximately 30 percent of the remaining construction personnel would relocate temporarily to one of these three cities for the duration of the project. The remaining 20 percent of construction personnel would be considered nonlocal and are anticipated to come from Bakersfield, Tehachapi, and other areas outside of Antelope Valley. Given this information, it was assumed that the average trip length for employee travel would be approximately 26.5 miles (Ruettgers & Schuler 2022).

To account for fugitive dust emissions from vehicle travel on unpaved roadways in proximity to the project site, it was assumed that 1 mile per one-way trip for all trips would be on unpaved roads. Fugitive dust emissions from unpaved road travel was estimated using emission factors from EPA's AP-42 Compilation of Air Pollutant Emission Factors, Section 13.2.2, Unpaved Roads, guidance for publicly accessible unpaved roads (EPA 2006). Unlike publicly accessible unpaved roadways, fugitive dust emissions from vehicle travel on unpaved roadways within the project site were estimating using emission factors from EPA's AP-42 Compilation of Air Pollutant Emission Factors, Section 13.2.2, Unpaved Roads, guidance for industrial unpaved roads (EPA 2006).

The remaining miles traveled to and from the project site were assumed to be on paved roads. Fugitive dust from paved roads was estimated using emission factors from CARB's *Miscellaneous Process Methodology 7.9, Entrained Road Travel, Paved Road Dust* (CARB 2018d).

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⁴ This assumption is based on recent actual data from the BigBeau Solar Project, which is currently under construction.

• **Site Grading and Earth Movement:** Fugitive dust emissions from earth movement (e.g., site grading, bulldozing) were quantified using default emission factors from CalEEMod. Data on the total graded acreage were provided by the project applicant, and the graded acreage was assumed to be 665 total acres. Per the applicant, it was assumed that all materials would be balanced onsite, and therefore no material import or export is expected.

A specific schedule is not known at this time, but proposed project construction is assumed to last 18 months, beginning in the third quarter of 2024. To compare with EKAPCD's annual thresholds, and provide a conservative estimate of air quality emissions, construction activities were assumed to occur within a single calendar year. Table 2-5 outlines the duration of each activity during construction of the proposed project. The off-road equipment and associated construction activities are summarized in Table 2-6. It was assumed that each piece would operate for 8 hours per day, Monday through Friday.

Table 2-5. Duration of Construction Activities

Phase	Duration (months) ¹
Move on	1
Site Preparation and Grading	4
New Access Road Construction	2
Internal Roads Construction	2
Solar Array Structural, Underground and Panel, and Battery Installation	12
Electrical Substation and Microwave Tower Construction	3
Generation Tie Line Construction	4
PV and Battery Storage Commissioning	2
Project Finalization (Commercial Operation)	2

¹ Various phases of construction would occur concurrently, and therefore the duration (months) are not additive. The total construction period would last approximately 18 months, whereas a worst-case construction scenario of 12 months was assumed for this analysis.

Table 2-6. Off-Road Equipment Required During Project Construction

Project Phase	Equipment Type	Number of Pieces	Horsepower
	Forklifts	6	89
	Generator Sets	6	84
	Graders	6	187
	Carts/ATVs	8	88
Move On	Rollers	3	80
	Rubber Tired Dozers	3	247
	Scrapers	3	367
	Tractors/Loaders/Backhoes	6	97
	Trenchers	3	78

Project Phase	Equipment Type	Number of Pieces	Horsepower
·	Graders	6	187
	Other Construction Equipment	4	172
	Carts/ATVs	8	88
Site Preparation & Grading	Rollers	6	80
	Rubber Tired Dozers	6	247
	Scrapers	4	367
	Tractors/Loaders/Backhoes	6	97
	Graders	6	187
	Other Construction Equipment	3	172
	Carts/ATVs	3	88
Access Road Improvements	Rollers	6	80
	Rubber Tired Dozers	4	247
	Scrapers	4	367
	Graders	4	187
	Carts/ATVs	3	88
Internal Roads Construction	Rollers	4	80
	Tractors/Loaders/Backhoes	4	97
	Forklifts	8	89
	Generator Sets	15	84
	Carts/ATVs	12	88
Solar Array Structural,	Rollers	3	80
Underground & Panel Installation, Battery Storage	Skid Steer Loaders	12	65
mistaliacion, battery storage	Post Drivers	15	65
	Tractors/Loaders/Backhoes	3	97
	Trenchers	7	78
	Aerial Lifts	4	63
	Cranes	3	231
Electrical Substation &	Forklifts	3	89
Microwave Tower Construction	Carts/ATVs	3	88
donser decion	Tractors/Loaders/Backhoes	7	97
	Trenchers	7	78
	Aerial Lifts	4	63
	Cranes	4	231
	Crawler Tractors	3	212
Generation Tie Line	Forklifts	3	89
Construction	Generator Sets	3	84
	Carts/ATVs	3	88
	Tractors/Loaders/Backhoes	4	97

Project Phase	Equipment Type	Number of Pieces	Horsepower
PV & Battery Storage Commissioning ¹	-	-	-
Project Finalization (Commercial Operation) ¹	-	-	-

¹ The PV & Battery Storage Commission and Project Finalization phases would require no construction equipment, as the majority of the solar facility would have been installed by this point. Only trucks would be required during these phases. Thus, the truck trips in these phases were added and modeled in the Solar Array Structural, Underground & Panel Installation, Battery Storage phase that would occur during the entire 12-month modeling period.

ATV = all-terrain vehicle; PV = photovoltaic

Localized Construction-Generated PM and DPM Concentrations

Dispersion Modeling

Construction activities have the potential to cause adverse health impacts and impacts on ambient air quality. Thus, a detailed dispersion modeling analysis was conducted to determine whether project construction would produce localized air quality impacts near the project area. EPA's AERMOD atmospheric dispersion model was used to simulate physical conditions and predict pollutant concentrations near the construction work areas.

AERMOD is EPA's recommended air dispersion model for near-field modeling from vented and non-vented sources. The model uses hourly meteorological observations and emission rates to determine hourly average concentrations from which other averaging periods (e.g., 24-hour, annual averages) are determined. The detailed information on the methodology and data used to conduct the air dispersion modeling is summarized below.

Inputs and Modeling

AERMOD (version 21112) was used to conduct the modeling analysis. All calculation inputs are identical between the simulations used in the DPM health risk assessment (discussed separately below) and for ambient air quality, except that the of analysis of DPM includes only exhaust-related sources, whereas the PM_{10} and $PM_{2.5}$ analysis includes both exhaust- and dust-related sources. The modeling used AERMAP terrain height information in the analysis. AERMOD's rural dispersion option was used in the analysis given the rural nature of the project area.

Meteorological and Terrain Data

AERMOD requires meteorological data as input into the model. These data are typically processed using AERMET and AERSURFACE, preprocessors to AERMOD. AERMET requires surface meteorological data, upper air meteorological data, and surface parameter data (supplied from AERSURFACE). CARB has meteorological datasets developed for use in air quality modeling. The dataset used in this analysis was based on data derived from the Mojave Airport (35.067, -118.15) for the January 1, 2009, to January 2, 2014, period. NED 1/3 Arc-Second (~10 meters) terrain data for the project area was inputted into the model via the AERMAP tool.

Receptors

Receptors were modeled using a network of discrete receptors, both at observed residential locations and along the fenceline (i.e., project boundary and closest location for public access to

ambient air). The closest observed residential locations that are not vacant and were modeled are presented in Appendix A. To represent the ambient air boundary, receptors were placed along the fenceline boundary at 25-meter increments.

Source Parameters

Emissions associated with construction equipment activities were treated as three different area polygon sources equal to the size of the project boundary. Off-road construction equipment exhaust emissions were modeled with a release height of 5 meters and an initial vertical dimension of 1.4 meters, consistent with construction air dispersion modeling recommendation by the Bay Area Air Quality Management District (BAAQMD 2012), Sacramento Metropolitan Air Quality Management District (SMAQMD 2013), and SCAQMD (2008). Dust emissions from construction equipment travel was modeled with a release height of 0 meters (i.e., dust coming off the ground) and an initial vertical dimension of 1 meter, consistent with Sacramento Metropolitan Air Quality Management District guidance.

Emissions associated with truck movement near the project site would primarily occur along the following unpaved and paved roads: Tehachapi Willow Springs Road and Dawn Road⁵. These roads were treated as line volume sources to represent the travel path between the project site and the expressway. It was assumed that the average on-road vendor, concrete, and haul truck height would have a maximum of 4 meters (13 feet). Following EPA haul road guidance (EPA 2012b), the plume height was set to 6.8 meters (1.7 times the truck height), the initial vertical dimension was set to 3.16 meters (plume height divided by 2.15), and the release height was set to 3.4 meters (half of the plume height), or approximately 11.15 feet. The plume width was estimated to be about 8 meters.

Because construction is expected to occur during daytime hours only, only daytime meteorology was assumed. The hour of day (HROFDAY) function was used in AERMOD to represent 8 hours of continuous construction equipment emissions per day (7:00 a.m. to 3:00 p.m.) for 5 days a week. Although construction could occur within a daily 10-hour window, it is not anticipated that construction equipment would be continuously operating for more than 8 hours per day. Workers would be required to take breaks and follow the CCR Section 2485, which limits vehicle idling to no more than 5 minutes.

Health Risk

The approach to estimating cancer risk from long-term inhalation exposure to carcinogens requires calculating a range of potential doses and multiplying by cancer potency factors in units of inverse dose to obtain a range of cancer risks. For cancer risk, the risk for each age group is calculated using the appropriate breathing rates, age sensitivity factors, exposure duration, and cancer risks calculated for individual age groups and summed to estimate cancer risk based on assumed exposure durations. This information and equations are provided by OEHHA in its 2015 guidance document (OEHHA 2015). Note that PM_{10} exhaust emissions are used as a surrogate for DPM based on OEHHA guidance.

The health risk factors used in this assessment are presented in Table 2-7. For each modeled receptor, the modeled annual concentration from AERMOD was multiplied by the calculated factor

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⁵ 120th street may be used as a secondary access road for a minimal amount (less than 10 percent) of construction traffic trips. Any construction vehicle trips along this road would be required to be consistent with Mitigation Measure MM-AQ-2. However, it is likely that this road would not be used at all during project construction.

and 1 million to obtain the cancer risk, in chances per million. A specific schedule is not known at this time, but proposed project construction is assumed to last 18 months, beginning in the third quarter of 2024. To compare with EKAPCD's annual mass emissions thresholds and provide a conservative estimate of air quality emissions, construction activities were assumed to occur within a single calendar year. However, to be conservative for the HRA, it is assumed that nearby residents may be exposed for 2 calendar years within the 0–<2 age bin, which has a higher breathing rate. Fraction of time at home was also set at 1, versus 0.85, to be conservative. These conservative assumptions were input into the CARB Hot Spots Analysis & Reporting Program Air Dispersion Modeling and Risk Tool, which follows the OEHHA 2015 guidance derived methods.

Table 2-7. Key Age-specific Factors Used in Health Risk Assessment

Factor	Third Trimester	0-<2 Years of Age Bin
Dose Inhalation		
Breathing Rates, Residential ¹	361.0	1,090.0
Cancer Risk		
Inhalation Cancer Potency Factor	1.1	1.1
Age Sensitivity Factors ²	10.0	10.0
Exposure Duration (2-year construction period)	0.0	2.0
Fraction of Time at Home	1.0	1.0

 $^{^1}$ Based on Point Estimates of Residential Daily Breathing Rates, Table 5.6 in OEHHA 2015, 95th percentile for third trimester and 0 – <2 age bin.

Long-term Operational Emissions

Operation of the proposed project would generate emissions of ROG, NO_X , CO, SO_X , PM_{10} , and $PM_{2.5}$ that could result in long-term impacts on ambient air quality. During operation of the solar and BESS facility, there would be daily operational activities, as well as periodic panel-washing activities and periodic water hauling for panel cleaning. Emissions would result from off-road equipment exhaust from pressure washers and on-road vehicle trip generation for water trucks, vendor trucks, and employee trips.

Combustion exhaust and fugitive dust (PM_{10} and $PM_{2.5}$) from vehicle travel on paved and unpaved surfaces were estimated using the same methods as above, including CalEEMod, CARB's EMFAC2021 model, and EPA's AP-42 *Compilation of Air Pollutant Emission Factors*, based on project-specific operational data (e.g., schedules, number of employees, truck volumes) provided by the project applicant. See Appendix B for a complete list of operational assumptions.

• **Off-Road Equipment**: Pressure washers would be required for periodic panel washing at the project site during normal operations. Per the project applicant, it was assumed that panel washing would occur up to one time per year and would take up to 3 months to complete, assuming use of four pressure washers per day. Emission factors for the use of the pressure washers were obtained from the *CalEEMod User's Guide* Appendix, which provides value per unit

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² Based on Table 8.3 in OEHHA 2015.

⁶ An increased exposure duration of 2 years compared to 18 months (1.5 years) increases the potential cancer risk at the nearby sensitive receptors.

of activity (in grams per horsepower-hour) by calendar year. The CalEEMod default horsepower and load factors were used to estimate criteria air pollutant generation.

On-Road Vehicles: On-road vehicles (e.g., pickup trucks, water trucks, passenger vehicles)
would be required for delivery of water for panel washing and employee commuting. Exhaust
emissions from on-road vehicles were estimated using the EMFAC2021 emissions model and
activity data (miles traveled per day) provided by the project applicant. Vendor trucks
delivering panel washing water are based on aggregated-speed emission rates for EMFAC's T7
Single Construction vehicle category.

It is anticipated that the panels will be washed once per year, using water from offsite sources transported to the site in water trucks. Emission factors for hauling of water for panel washing are based on aggregated-speed emission rates for EMFAC's T6 In-State Heavy category. Per the transportation analysis, it is anticipated the washing will use up to 8 acre-feet of water over a 3-month period. Assuming use of 5,000-gallon capacity trucks, nine water trucks per day would be required for the delivery of water during panel washing (Ruettgers & Schuler 2022). It was conservatively assumed that water during operations will be provided from offsite sources. According to the Water Supply Assessment prepared for the project, potential locations for water supply are located less than 5 miles and 6 miles south of the project site (ICF 2022). For the purposes of providing a conservative analysis, a one-way trip distance of 6 miles was assumed for delivery of water during panel cleaning.

Emission factors for employee commute vehicles are based on a weighted average for all vehicle speeds for EMFAC's Light-Duty Automobile/Light-Duty Truck vehicle categories. Per the project applicant, typical daily operation of the solar facility would require up to 15 full-time and/or pat-time staff at the O&M facility located at the adjacent BigBeau Solar Project. As with project construction, employee travel distance was assumed to be 26.5 miles per trip.

To account for fugitive dust emissions from vehicle travel on unpaved roadways in proximity of the project site, it was assumed that the final 1 mile of travel per one-way trip would be unpaved. As mentioned above, fugitive dust emissions from publicly accessible and industrial sites differ due to the average weight of vehicles that typically travel on each roadway type. Fugitive dust emissions from travel on the 1 mile of unpaved roadway leading to the project site were estimated using the appropriate unpaved emission factors from EPA's AP-42 *Compilation of Air Pollutant Emission Factors, Section 13.2.2, Unpaved Roads,* guidance for publicly accessible roads, whereas travel on the project site assumed emission factors from the same guidance document for industrial unpaved roads. The remaining miles traveled were assumed to be on paved roads. Fugitive dust from paved roads was estimated using emission factors from EPA's AP-42 *Compilation of Air Pollutant Emission Factors, Section 13.2.1, Paved Roads,* guidance, and CARB's *Miscellaneous Process Methodology 7.9, Entrained Road Travel, Paved Road Dust.*

2.3.3 Project Impacts

Impact AQ-1: Would the proposed project conflict with or obstruct implementation of the applicable air quality plan?

In general, a project would not interfere with the applicable air quality plan if it were consistent with growth assumptions used to form the applicable air quality plan and if the project implements all reasonably available and feasible air quality control measures from the applicable air quality plan or planning document referenced or used in the applicable air quality plan. In general, a project

would conflict with or obstruct implementation of the applicable air quality plan if the project is inconsistent with the underlying land use designation and zoning of the local applicable plan (e.g., General Plan). In this case, a conflict would occur if a project would introduce growth that is not included in the most current General Plan and is not mitigated by the applicable air quality plan. Air quality impacts are controlled locally through policies and provisions of EKAPCD, the *Kern County General Plan*, and the Kern County Code of Building Regulations. The CCAA requires air pollution control districts with severe or extreme air quality problems to provide for a 5-percent reduction in nonattainment emissions per year. The Attainment Plans prepared for EKAPCD comply with this requirement.

Short-term Construction

During construction, the project would exceed the significance thresholds for emissions established by EKAPCD for NO_X and PM_{10} , despite the implementation of equipment exhaust and fugitive dust mitigation measures (see **Impact AQ-2**). As shown in Table 2-8, the project's mitigated construction emissions would not exceed EKAPCD significance thresholds for any of the other applicable criteria pollutants throughout the project construction period. Although the project's NO_X and PM_{10} emissions during construction would exceed EKAPCD's thresholds, these emissions would be generated over a short-term construction period and cease once the project was completed. However, although these emissions are considered temporary, and not a long-term emissions source, they would still exceed EKAPCD's mass emission thresholds and potentially obstruct EKAPCD's ability to achieve further progress toward attainment of the 8-hour O_3 ambient air quality standard. Furthermore, although implementation of mitigation measures **MM-AQ-1** and **MM-AQ-2** would ensure that all reasonably available and feasible air quality control measures would be implemented during project construction, mitigated emissions would still exceed EKAPCD's established significance thresholds. Thus, construction of the proposed project would conflict with the air quality planning goals set forth by the EKAPCD's Attainment Plans.

Long-term Operational Emissions

As mentioned above, a project would not interfere with the applicable air quality plan if it were consistent with growth assumptions used to form the applicable air quality plan (i.e., most recent General Plan) and if the project implements all reasonably available and feasible air quality control measures. The proposed project would not induce growth and would therefore not result in a substantial increase in vehicle miles traveled and associated criteria pollutant emissions. The only long-term increase in criteria pollutant emissions associated with O&M of the proposed project would result from on-road vehicle and truck travel to and from the site to perform routine maintenance and occasional panel washing and daily staff travel to and from the BigBeau O&M facility. These trips would be minimal and would not result in a substantial increase in emissions that would conflict with EKAPCD's *Ozone Air Quality Management Plan*.

Impact AQ-2: Would the proposed project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?

Short-term Construction Emissions

Table 2-8 summarizes total annual project-related construction emissions. As mentioned above, all construction activities were assumed to occur in the same year to compare to EKAPCD's annual emissions thresholds.

As shown in Table 2-8, construction of the proposed project would generate annual emissions of ROG and SO_2 that are below the applicable EKAPCD thresholds before mitigation. Project construction would generate an estimated 53 tons per year of NO_X and 65 tons per year of PM_{10} emissions prior to mitigation, which would exceed the annual emissions thresholds set by EKAPCD of 25 tons per year and 15 tons per years, respectively. Note that the majority of NO_X emissions (85 percent) would be associated with onsite construction equipment activity, whereas the majority of PM_{10} emissions (86 percent) would be associated with vehicle travel to and within the project site. Mitigation measures have been prescribed to target reductions of NO_X and PM_{10} ; EKAPCD has not adopted a threshold for $PM_{2.5}$ emissions.

Table 2-8. Estimated Construction-Related Criteria Air Pollutant Emissions – Unmitigated

			Annual Criteria Pollutant Emissions (tons per year)								
Phase	ROG	NOx	СО	PM ₁₀ Exhaust	PM ₁₀ Dust	PM ₁₀ Total	PM _{2.5} Exhaust	PM _{2.5} Dust	PM _{2.5} Total	SO ₂	
Move On	<1	1	1	<1	<1	<1	<1	<1	<1	<1	
Site Preparation and Grading	1	6	5	<1	2	2	<1	1	1	<1	
New Access Road Construction	<1	2	2	<1	1	1	<1	<1	<1	<1	
Internal Roads Construction	<1	1	1	<1	<1	<1	<1	<1	<1	<1	
Solar Array Structural, Underground and Panel, and Battery Installation	5	39	35	2	60	62	2	7	9	<1	
Electrical Substation and Microwave Tower Construction	<1	1	2	<1	<1	<1	<1	<1	<1	<1	
Gen-tie Line Construction	<1	2	2	<1	<1	<1	<1	<1	<1	<1	
Annual Emissions	6	53	47	2	63	65	2	8	11	<1	
EKAPCD Thresholds	25	25	NT	NT	NT	15	NT	NT	NT	27	
Exceed Threshold?	No	Yes	_	_	_	Yes	_	_	_	No	

Source: ICF Emissions Modeling (Appendix B).

EKAPCD = Eastern Kern Air Pollution Control District; NO_X = nitrous oxides; NT = No threshold has been established by EKAPCD; $PM_{2.5}$ = particles with an aerodynamic diameter of 2.5 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with a erodynamic diameter of 10 micrometers or less; PM_{10} = particles with a erodynamic di

Mitigation Measures

MM-AQ-1: Implement Diesel Emission-Reduction Measures During Construction.

To control NO_X and PM emissions during construction, the project proponent/operator and/or its contractor(s) shall implement the following measures during construction of the project, subject to verification by the County:

- a. Off-road equipment engines over 25 horsepower shall be equipped with EPA Tier 3 or higher engines unless Tier 3 construction equipment is not available locally.
- b. All equipment shall be maintained in accordance with the manufacturer's specifications.
- c. Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 5 minutes.
- d. Notification shall be provided to trucks and vehicles in loading or unloading queues that their engines shall be turned off when not in use for more than 5 minutes.
- e. Electric equipment shall be used to the extent feasible in lieu of diesel or gasoline-powered equipment.
- f. All construction vehicles shall be equipped with proper emissions-control equipment and kept in good and proper running order to substantially reduce NO_X emissions.
- g. On-road and off-road diesel equipment shall use diesel particulate filters (or the equivalent), if permitted under manufacturer's guidelines.
- h. Existing electric power sources shall be used to the extent feasible. This measure would minimize the use of higher polluting gas or diesel generators.
- i. The hours of operation of heavy-duty equipment and the quantity of equipment in use shall be limited to the extent feasible.

MM-AQ-2. Implement Fugitive Dust Control Plan During Site Preparation (Vegetation Clearing and Grubbing), Construction, Operations, and Decommissioning.

To control fugitive PM emissions before and during construction, prior to the issuance of grading or building permits and commencement of any earthwork activities, the project proponent shall prepare a comprehensive Fugitive Dust Control Plan for review by the Kern County Planning and Natural Resources Department. The plan shall include all EKAPCD recommended measures, but not limited to the following measures:

- a. During the initial site preparation stage (i.e., vegetation clearing and grubbing) EKAPCD-approved dust suppressants/palliatives and/or mulch shall be applied to all construction areas that have undergone vegetation clearing and grubbing and are unused for at least 14 consecutive days.
- b. All soil actively excavated or graded shall be watered sufficiently to prevent excessive dust. Watering shall occur as needed, with complete coverage of disturbed soils areas. Watering shall take place a minimum of three times daily where soil is being actively disturbed unless dust is otherwise controlled by rainfall or use of a dust suppressant. This watering may be performed either by water trucks or a temporary irrigation line system.

c. Vehicle speed for all onsite (i.e., within the project boundary) construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site. Signs identifying construction vehicle speed limits shall be posted along onsite roadways, at the site entrance/exit, and along unpaved site access roads.

- d. Construction vehicle speeds on all offsite unpaved -site access roads (i.e., outside the project boundary) shall not exceed 15 mph. Signs identifying vehicle speed limits shall be posted along unpaved site access roads and at the site entrance/exit.
- e. Vehicle travel shall only occur on approved unpaved access roads, consistent with the Construction Traffic Control Plan.
- f. EKAPCD-approved dust suppressants/palliatives or mulch shall be applied not less than once every 2 weeks, or as recommended by the product manufacturer(s), on unpaved areas that experience high amounts of project-generated vehicle activity, such as the main site entrance driveway and internal permitter road.
- g. Designated PV construction staging and parking areas shall be sited at least 1,000 feet from the nearest sensitive receptors and at least 500 feet from the nearest project fenceline. Sensitive receptors include daycare centers, hospitals, senior care facilities, residences, parks, and other areas where people may congregate. Furthermore, EKAPCD-approved dust suppressants/palliatives shall be applied to all construction staging and parking areas.
- h. All onsite unpaved roads and offsite unpaved public project site access road(s) shall be effectively stabilized for dust emissions using water or EKAPCD-approved dust suppressants/palliatives sufficient to prevent wind-blown dust exceeding 20 percent opacity at nearby residences or public roads. If water is used, watering shall occur a minimum of three times daily, sufficient to keep soil moist along actively used roadways. Watering shall occur in the form of either water trucks or a temporary irrigation line system. During the dry season, unpaved road surfaces and vehicle parking/staging areas shall be watered immediately prior to periods of high use (e.g., worker commute periods, truck convoys). Reclaimed (i.e., nonpotable) water shall be used to the extent available and feasible.
- i. The amount of the disturbed area (e.g., site preparation, grading, excavation) shall be reduced or phased where possible. Such activities shall be limited so that no more than 50 percent of the site is graded within a 10-day period.
- j. Prior to and during construction, all disturbed areas shall be sufficiently watered or stabilized by EKAPCD-approved methods to prevent excessive dust. On dry days, watering shall occur a minimum of three times daily on actively disturbed areas. Watering frequency shall be increased whenever wind speeds exceed 15 mph or, as necessary, to prevent wind-blown dust exceeding 20 percent opacity at nearby residences or public roads. Reclaimed (i.e., nonpotable) water shall be used to the extent available and feasible.
- k. All site preparation (i.e., vegetation clearing and grubbing), grading, earth-moving, and excavation activities shall cease during periods when dust plumes of 20 percent or greater opacity affect public roads or nearby occupied structures.

l. All disturbed areas anticipated to be inactive for periods of 14 days or more shall be treated to minimize wind-blown dust emissions. Treatment may include, but is not limited to, the application of an EKAPCD-approved chemical dust suppressant, gravel, hydromulch, revegetation/seeding, or wood chips.

- m. Equipment and vehicle access to disturbed areas shall be limited to only those vehicles necessary to complete the construction activities.
- n. Where applicable, permanent dust-control measures shall be implemented as soon as possible following completion of any soil-disturbing activities.
- o. Stockpiles of dirt or other fine loose material shall be stabilized by watering or other appropriate methods sufficient to reduce visible dust emissions to a limit of 20 percent opacity. If necessary and where feasible, three-sided barriers shall be constructed around storage piles, or piles shall be covered by use of tarps, hydromulch, woodchips, or other materials sufficient to minimize wind-blown dust.
- p. Water sufficient to minimize wind-blown dust shall be applied prior to and during the demolition of onsite structures.
- q. Where acceptable to the fire department and feasible, weed control shall be accomplished by mowing instead of disking, thereby leaving the ground undisturbed and with a mulch covering.
- r. All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least 6 inches of freeboard (i.e., minimum vertical distance between top of the load and top of the trailer) in accordance with California Vehicle Code Section 23114.
- s. Gravel pads, grizzly strips, or other material track-out control methods approved for use by Kern County shall be installed where vehicles enter or exit unpaved roads onto paved roadways.
- t. Haul trucks and off-road equipment leaving the site shall be washed with water or highpressure air, or rocks/grates at the project entry points shall be used, when necessary, to remove soil deposits and minimize the track-out/deposition of soil onto nearby paved roadways.
- u. During construction, paved road surfaces adjacent to the site access road(s), including adjoining paved aprons, shall be cleaned, as necessary, to remove visible accumulations of track-out material. If dry sweepers are used, the area shall be sprayed with water prior to sweeping to minimize the entrainment of dust. Reclaimed water shall be used to the extent available.
- v. Portable equipment of 50 horsepower or greater used during construction activities (e.g., portable generators) shall require California statewide portable equipment registration (issued by CARB) or an EKAPCD permit.
- w. The Fugitive Dust Control Plan shall identify a designated person or persons to monitor the fugitive dust emissions and enhance the implementation of the measures, as necessary, to minimize the transport of dust offsite and to ensure compliance with identified fugitive dust control measures. Contact information for a hotline shall be posted onsite for use in the event that complaints or concerns are received during working hours, holidays and weekend periods when work may not be in progress. The

- names and telephone numbers of such persons shall be provided to the EKAPCD Compliance Division prior to the start of any grading or earthwork.
- x. Signs shall be posted at the project site entrance and written notifications shall be provided to residential land uses located within 1,000 feet of the project site a minimum of 30 days prior to initiation of project construction. The signs and written notifications shall include the following information: (a) project name; (b) anticipated construction schedule(s); and (c) telephone number(s) for designated construction activity monitor(s) or, if established, a complaint hotline.
- y. The designated construction monitor shall document and immediately notify EKAPCD of any air quality complaints received. If necessary, the project operator or contractor will coordinate with EKAPCD to identify any additional feasible measures or strategies to be implemented to address public complaints.

Level of Significance after Mitigation

Mitigated emissions are summarized in Table 2-9. With implementation of mitigation measures MM-AQ-1 and MM-AQ-2, construction-generated emissions of NO_X would be reduced to approximately 41 tons/year and emissions of PM_{10} to approximately 25 tons/year. Implementation of the proposed mitigation measures would ensure compliance with applicable EKAPCD rules and regulations, including Rule 402 (Fugitive Dust), but would not reduce NO_X or PM_{10} emissions to below the EKAPCD significance threshold. Mitigation measures would ensure use of only Tier 3 off-road equipment to address exhaust emissions of NO_X and dust control measures to reduce fugitive PM_{10} emissions. Nonetheless, total mitigated emissions of NO_X and PM_{10} would continue to exceed EKAPCD's significance thresholds.

Because mitigated NO_X emissions would exceed thresholds EKAPCD developed in consideration of achieving attainment status under NAAQS and CAAQS for O_3 , construction NO_X emissions from the project would contribute a significant level of air pollution within Kern County and the MDAB and a significant impact would occur.

Eastern Kern County is currently in nonattainment for O_3 CAAQS and NAAQS and PM $_{10}$ CAAQS (see Table 2-3). Certain individuals residing in areas that do not meet CAAQS or NAAQS could be exposed to pollutant concentrations that cause or aggregative acute or chronic health conditions (e.g., asthma, lost workdays, premature mortality). Although implementation of the project would contribute to existing and future air pollution, project-generated construction emissions represent approximately 0.3 percent of EKAPCD's NO_X emissions (EKAPCD 2017a). Given the small size of this contribution, the specific magnitude and locations of any potential changes in regional O_3 formation—and associated health consequences—from these additional emissions cannot be quantified with any level of certainty, due to the dynamic and complex nature of regional pollutant formation and distribution (e.g., meteorology, emissions sources, sunlight exposure). Similar limitations exist for precisely modeling project-level health consequences of directly emitted NO_X ; however, it is known that public health will continue to be affected in Eastern Kern County so long as the region does not attain CAAQS or NAAQS.

Air Quality Technical Report

Bullhead Solar Project

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⁷ EKAPCD NO_X emissions reported in the regional attainment plan are 30.5 tons per day in 2012 (EKAPCD 2017a). Bullhead mitigated construction NO_X emissions would be 39 tons per year, or approximately 0.093 ton per day.

Table 2-9. Estimated Construction-related Criteria Air Pollutant Emissions – Mitigated with Tier 3 and Fugitive Dust Control

	Annual Criteria Pollutant Emissions (tons per year)									
Phase	ROG	NOx	СО	PM ₁₀ Exhaust	PM ₁₀ Dust	PM ₁₀ Total	PM _{2.5} Exhaust	PM _{2.5} Dust	PM _{2.5} Total	SO ₂
Move On	<1	1	1	<1	<1	<1	<1	<1	<1	<1
Site Preparation and Grading	<1	5	6	<1	1	1	<1	<1	1	<1
Access Road Improvements	<1	2	2	<1	<1	<1	<1	<1	<1	<1
Internal Roads Construction	<1	1	1	<1	<1	<1	<1	<1	<1	<1
Solar Array Structural, Underground and Panel, and Battery Installation	2	30	35	1	23	23	1	3	4	<1
Electrical Substation and Microwave Tower Construction	<1	1	2	<1	<1	<1	<1	<1	<1	<1
Generation Tie Line Construction	<1	2	3	<1	<1	<1	<1	<1	<1	<1
Annual Emissions	2	41	50	1	24	25	1	4	4	<1
EKAPCD Thresholds	25	25	NT	NT	NT	15	NT	NT	NT	27
Exceed Threshold?	No	Yes	-	_	-	Yes	-	_	_	No

Source: ICF Emissions Modeling (Appendix B).

EKAPCD = Eastern Kern Air Pollution Control District; NO_X = nitrous oxides; NT = No threshold has been established by EKAPCD; $PM_{2.5}$ = particles with an aerodynamic diameter of 2.5 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with aerodynamic diam

Long-term Operational Emissions

Once operational, emissions associated with the proposed project would be related to daily maintenance activities, periodic panel washing, and application of water for dust control. Table 2-10 summarizes total annual project-related operational air emissions.

Table 2-10 presents estimated operational emissions associated with implementation of the proposed project. As shown, emissions associated with daily operations and periodic panel washing would not exceed applicable EKAPCD thresholds. As such, these emissions levels would not be expected to contribute a significant level of air pollution such that regional air quality within the MDAB would be degraded. Accordingly, impacts related to a project-level net increase in criteria pollutants during operation would be less than significant.

Cumulative Emissions

As discussed above, the project site is located within the Kern County portion of the MDAB. This area is designated as nonattainment for federal and state O_3 standards, as well as state PM_{10} standards. EKAPCD's approach for assessing cumulative impacts is based on the forecasts of attainment and ambient air quality standards in accordance with requirements of the federal and state clean air acts.

The County's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports* (Kern County 2006) requires that cumulative emissions from projects within a 1- and 6-mile radius are analyzed in the cumulative scenario. A preliminary list of cumulative projects was provided by Kern County in February 2022 (via in-person meeting and through email exchanges), and those that had the potential to contribute to a cumulative effect were included in this analysis; refer to Appendix D. To the extent that environmental documents for these projects were prepared and publicly available at the time this report was prepared, the quantified emissions for these projects were incorporated into this cumulative analysis. In accordance with the Kern County's Guidelines, the evaluation of cumulative air quality impacts should:

- Evaluate localized impacts, including projects located within a 1- and 6-mile radius.
- Evaluate consistency with existing air quality plans.
- Summarize CARB air basin emissions.

Table 2-10. Estimated Long-term Operations-Related Criteria Air Pollutant Emissions

	Annual Criteria Pollutant Emissions (tons per year)									
Activity	ROG	NOx	СО	PM ₁₀ Exhaust	PM ₁₀ Dust	PM ₁₀ Total	PM _{2.5} Exhaust	PM _{2.5} Dust	PM _{2.5} Total	SO ₂
Daily Operations	<1	<1	<1	<1	7	7	<1	1	1	<1
Periodic Panel Washing	<1	1	1	<1	<1	<1	<1	<1	<1	<1
Electricity from Water Demand	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Water Hauling	<1	<1	<1	<1	1	1	<1	<1	<1	<1
Potable Water Deliveries	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Annual Emissions	<1	1	1	<1	8	8	<1	1	1	<1
EKAPCD Thresholds	25	25	NT	NT	NT	15	NT	NT	NT	27
Exceed Threshold?	No	No	_	_	_	No	_	_	_	No

Source: ICF Emissions Modeling (Appendix B).

EKAPCD = Eastern Kern Air Pollution Control District; NO_X = nitrous oxides; NT = No threshold has been established by EKAPCD; $PM_{2.5}$ = particles with an aerodynamic diameter of 2.5 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with aerodynamic diameter of 10 micrometers or less; PM_{10} = particles with aerodynamic diam

Local Air Quality Impacts

The list of cumulative projects provided by Kern County⁸ included three projects within a 1-mile radius and 18 projects within a 6-mile radius. After further refinement and consideration, two initial projects within a 1-mile radius were removed because they will not be developed, and two projects were added that are under the jurisdiction of other agencies. Three projects within 1-mile are considered in this analysis. From the original list of projects within a 6-mile radius, most were removed due to the nature of the project (e.g., single mobile home, boundary adjustment, dog training facility), resulting in three projects with the potential to contribute to a cumulative effect related to air quality. In total, six projects within a 6-mile radius are considered in this analysis. Refer to Appendix D for the list and map of cumulative projects. Cumulative construction and operational emissions are summarized in Tables 2-11 and 2-12, respectively. To conservatively assume a worst-case scenario, it was assumed that all six projects within the 6-mile radius would be constructed and operational concurrently with the proposed project. However, it should be noted that construction for three of these projects is expected to be completed before the start of Bullhead Solar construction.

Construction

As shown in Table 2-11, when the proposed project's construction emissions are combined with those from projects within the 1- and 6-mile radius, cumulative construction emissions of ROG, NO_X, and PM₁₀ are estimated to exceed EKAPCD's significance thresholds. Thus, construction emissions resulting from the proposed project and other cumulative projects would be cumulatively significant.

Additionally, as shown previously in Table 2-8, the proposed project's unmitigated construction mass emissions of NO_X are greater than the applicable EKAPCD significance threshold of 25 tons/year, and emissions of PM₁₀ are greater than the EKAPCD significance threshold of 15 tons/year. The EKAPCD thresholds, which were designed to assist the region in attaining the applicable CAAQS and NAAQS, are exceeded for NO_X and PM_{10} , even when all feasible and reasonably available air quality mitigation measures (i.e., Mitigation Measures MM-AQ-1 and MM-AQ-2) are implemented, as shown in Table 2-9. Because the proposed project's construction emissions would exceed the EKAPCD annual thresholds for NO_X and PM₁₀ even with implementation of Mitigation Measures MM-AQ-1 and MM-AQ-2, the proposed project's contribution to air quality impacts during construction would be cumulatively considerable, with or without the other projects in the areas.

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⁸ Kern County provided the cumulative project list to ICF in February 2022.

Table 2-11. Cumulative Mitigated Construction Emissions within 1-Mile and 6-Mile Radii

	Annu	al Criteria	Pollutant 1	Emissions	(tons per y	year)
Project -	ROG	NOx	со	PM ₁₀ Total	PM _{2.5} Total	SO ₂
Proposed Project	2	41	50	25	4	<1
Projects within a 1-Mile Radius						
BigBeau Solar Project	2	39	41	39	6	<1
California High Speed Rail: Bakersfield to Palmdale Project ²	27	540	279	18	14	1
Hydrostar Gem A-CAES Project			Data not	available		
Total:	31	620	370	82	24	1
Significance Thresholds:	25	25	NT	15	NT	27
Exceed Thresholds?	Yes	Yes	-	Yes	-	No
Projects within a 6-Mile Radius						
Investment Concepts			Data not	available		
Antelope Valley Solar Project	1.4	17.46	5.71	10.34	2.68	0.02
Raceway 2.0 Solar Project	1.8	15.7	11.9	14.2	3.0	0.03
Total ¹ :	34.2	653.2	387.6	106.5	29.7	1.1
EKAPCD Thresholds:	25	25	NT	15	NT	27
Exceed Thresholds?	Yes	Yes		Yes		No

Source: Data compiled by ICF. Refer to Appendix D for a more detailed listing of cumulative projects. Totals may not sum due to rounding.

Operations

As shown in Table 2-12, the cumulative operational emissions generated by the proposed project and other cumulative projects located within a 1- and 6-mile radius of the project site would not exceed EKAPCD's significance thresholds for PM_{10} because the California High Speed Rail Bakersfield to Palmdale Project would help drastically reduce criteria pollutant emissions within EKAPCD jurisdiction.

¹Totals include the proposed project emissions and emissions from projects within both the 1-mile and 6-mile radii, with the exception of one 18-unit apartment complex development where data was unavailable at the time of this analysis.

². The design alternative with the highest construction emissions was selected (Alternative 5). EKAPCD = Eastern Kern Air Pollution Control District; NO_X = nitrous oxides; NT = No threshold has been established by EKAPCD; $PM_{2.5}$ = particles with an aerodynamic diameter of 2.5 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; ROG = reactive organic gases; SO_2 = sulfur dioxide

Table 2-12. Cumulative Operational Emissions within 1-Mile and 6-Mile Radii

	Annu	al Criteria	Pollutant	Emissions	(tons per	year)
Project -	ROG	NOx	СО	PM ₁₀ Total	PM _{2.5} Total	SO ₂
Proposed Project	<1	1	1	8	1	<1
Projects within a 1-Mile Radius						
BigBeau Solar Project	<1	<1	<1	6	1	<1
California High Speed Rail: Bakersfield to Palmdale Project ²	-43	-272	-1,094	-63	-22	-20
Hydrostar Gem A-CAES Project			Data not	available		
Total:	-42	-271	-1,093	-49	-20	-19
Significance Thresholds:	25	25	NT	15	NT	27
Exceed Thresholds?	No	No	-	No	-	No
Projects within a 6-Mile Radius						
Investment Concepts			Data not	available		
Antelope Valley Solar Project	0.01	0.01	0.08	0.01	0.00	0.0
Raceway 2.0 Solar Project	0.0	0.45	0.3	0.02	0.02	0.0
Total ¹ :	-42	-271	-1,093	-49	-20	-19
EKAPCD Thresholds:	25	25	NT	15	NT	27
Exceed Thresholds?	No	No	-	No	_	No

Source: Data compiled by ICF. Refer to Appendix D for a more detailed listing of cumulative projects. Totals may not sum due to rounding.

EKAPCD = Eastern Kern Air Pollution Control District; NO_X = nitrous oxides; NT = No threshold has been established by EKAPCD; $PM_{2.5}$ = particles with an aerodynamic diameter of 2.5 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; ROG = reactive organic gases; SO_2 = sulfur dioxide

Consistency with Existing Air Quality Plans

Construction

As discussed above, the project would not be consistent with the EKAPCD attainment plan due to exceedance of NO_X and PM_{10} emissions above the EKAPCD's thresholds during project construction. These emissions would be generated over a short-term construction period and would cease once the project was completed. However, although implementation of Mitigation Measures MM-AQ-1 and MM-AQ-2 would ensure that all reasonably available and feasible air quality control measures would be implemented during project construction, emissions would still exceed the significance thresholds established by the EKAPCD (Table 2-9). Therefore, construction of the proposed project would conflict with the air quality planning goals set forth by EKAPCD Attainment Plans.

Operations

As summarized in Table 2-10, during operations, the proposed project is not expected to exceed thresholds for any nonattainment pollutant. Additionally, as discussed for **Impact AQ-1**, the proposed project is not expected to induce growth or result in trips or criteria pollutant emissions that would conflict with the EKAPCD's Ozone AQMP. These trips would be minimal and would not

¹Totals include the proposed project emissions, and emissions from projects within both the 1-mile and 6-mile radii, with the exception of one 18-unit apartment complex development where data was unavailable at the time of this analysis.

result in a substantial increase in emissions that would conflict with EKAPCD's Ozone Air Quality Management Plan.

CARB Emission Inventory: MDAB Air Basin

As shown in Table 2-13, the project's operational emissions are compared to the 2030 projected emissions of the MDAB and the Kern County portion of the MDAB to evaluate the proposed project's contribution to the cumulative air quality conditions in the surrounding region (CARB 2022a). As shown, the proposed project's contribution to cumulative air quality conditions would be negligible relative to the County and MDAB emissions.

Table 2-13. 2030 Emission Projections for the Proposed Project, Kern County, and the Mojave Desert Air Basin

	Annual Criteria Pollutant Emissions (tons per year)								
Project	ROG	NOx	СО	PM ₁₀	PM _{2.5}	SO ₂			
Proposed Project	<1	1	1	8	1	<1			
Kern County Portion of MDAB	3,504	12,812	18,214	5,950	2,555	1,351			
MDAB	27,083	54,422	86,724	58,218	15,075	3,577			
Project Percent of Kern County Portion of MDAB	0.0057%	0.0078%	0.0060%	0.1328%	0.0313%	0.0002%			
Project Percent of MDAB	0.0007%	0.0018%	0.0013%	0.0136%	0.0053%	0.0001%			

Source: CARB 2022a, data compiled by ICF.

Totals may not sum due to rounding.

MDAB = Mojave Desert Air Basin; NOx = nitrous oxides; PM_{2.5} = particles with an aerodynamic diameter of 2.5 micrometers or less; PM₁₀ = particles with an aerodynamic diameter of 10 micrometers or less; ROG = reactive organic gases; SO₂ = sulfur dioxide

Impact AQ-3: Would the proposed project expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors are people who are considered to be more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions sources, or duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirmed are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually are home for extended periods of time, with associated greater exposure to ambient air quality. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system.

Diesel Particulate Matter

As mentioned above, DPM is classified as a carcinogenic TAC by CARB and is the primary pollutant of concern with regard to health risks to sensitive receptors. Diesel-powered construction equipment, as well as heavy duty truck movement and hauling, would emit DPM that could potentially expose nearby sensitive receptors to pollutant concentrations. Health risks related to

DPM are assessed quantitatively, based on anticipated project emissions and proximity to sensitive receptors, which include the residential dwellings sparsely scattered around the perimeter of the project site, located at various distances from the project site boundary. For purposes of analysis, risk was also assessed at the project fenceline to demonstrate the low levels of risk associated with the project.

Table 2-14 shows the cancer risk and non-cancer hazard index. As shown in Table 2-14, implementation of the proposed project would not result in increased cancer risk or hazard index in excess of thresholds. It should be noted that DPM does not have an acute hazard index value. Refer to Appendix C for all dispersion modeling assumptions and results.

Table 2-14. Estimated Health Risk during Construction

Location	Cancer Risk (cases per million)	Chronic Hazard Index
Maximum Incremental Risk at Existing Receptors ¹	3.67	0.0022
Maximum Incremental Risk at Project Fence Line ²	6.23	0.0038
Thresholds	10.0	1.0
Exceed Thresholds?	No	No

Source: ICF Emissions Modeling (Appendix C).

Once operational, the project would result in visits to the facility, but vehicle emissions generated by these visits would mostly be from gasoline-powered passenger vehicles and pickups, which do not emit DPM. Although diesel-powered pressure washers and trucks may be used during panel washing, DPM emissions would be minimal due to the short duration of these operations. Therefore, operation of the project would not result in an increase in DPM emissions.

Naturally Occurring Asbestos

As mentioned above, asbestos is commonly found in ultramafic rock, which occurs throughout California, especially in the foothills of the Sierras, the Klamath Mountains, and Coastal Ranges. According to the California Department of Conservation, the proposed project site is not in an area likely to contain ultramafic rock or naturally occurring asbestos (Department of Conservation 2000). For this reason, the project would not have impacts related to exposure to asbestos during construction.

Localized Particulate Concentrations

Project construction would include equipment and truck exhaust and activities that cause ground disturbance. Uncontrolled emissions of PM could result in increased concentrations that could have an adverse impact on localized air quality. Localized concentrations of PM_{10} and $PM_{2.5}$ emissions were evaluated to determine maximum predicted concentrations of both PM_{10} and $PM_{2.5}$.

As shown in Table 2-15, the proposed construction activity at and near the project site would not cause an exceedance of the appropriate PM_{10} and $PM_{2.5}$ SIL at the most-affected sensitive offsite receptors. Therefore, impacts would be less than significant with mitigation. Note that the largest

¹ Highest residential cancer risk and chronic hazard were measured at Universal Transverse Mercator (UTM) Zone 11 South, Easting: 382087.86, Northing: 3863254.35.

² The highest fenceline cancer risk and chronic hazard were measured at UTM Zone 11 South, Easting: 382015.24, Northing: 3863333.39.

contribution of PM_{10} and $PM_{2.5}$ at the maximally exposed receptor and fenceline locations is from unpaved road dust due to water truck travel within the project area. These water truck trips would only occur during project construction and would shrink in size as more of the project site is developed with solar panels. Refer to Appendix C for all dispersion modeling assumptions and results.

Table 2-15. Estimated Particulate Matter Concentrations during Construction

Location	24-hour PM ₁₀ ¹	24-hour PM _{2.5} ¹
Maximum at Existing Receptors	$1.25 \ \mu g/m^3$	$0.70~\mu g/m^3$
Maximum at Project Fence Line	$1.49 \mu g/m^3$	$0.83 \ \mu g/m^3$
EPA SIL	$5.0 \mu g/m^3$	$1.2 \ \mu g/m^3$

Source: ICF Emissions Modeling (Appendix C).

Notes

EPA = U.S. Environmental Protection Agency; $PM_{2.5}$ = particles with an aerodynamic diameter of 2.5 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; SIL = significant impact level

Carbon Monoxide

A *CO hot spot* is a localized concentration of CO that is above the state or national 1-hour or 8-hour ambient air standards for the pollutant. The potential for the proposed project to result in localized CO impacts at intersections resulting from addition of its traffic volumes is assessed based on EKAPCD's suggested criteria, which recommends performing a localized CO impact analysis for intersections operating at or below LOS E (County of Kern 2006). According to Traffic Impact Analysis, the proposed project would not result in intersections operating at or below LOS E. Therefore, the project would not have CO hotspots-related impacts nor contribute a significant level of CO such that localized air quality and human health would be degraded substantially.

Valley Fever and COVID-19

As discussed in Section 2.1.5, Valley Fever is a disease affecting the lungs caused by spores of the *Coccidioides immitis* fungus. These spores are found in soils and become airborne and inhaled during disturbance of contaminated soils. Construction activities would result in ground disturbance that could potentially expose onsite construction workers and nearby receptors to airborne spores. Therefore, the risk of exposure and contraction of Valley Fever as a result of the proposed project would be increased from the existing conditions, and MM-AQ-3 and MM-AQ-5 are required to ensure that construction workers take the proper precautions to avoid Valley Fever exposure. Implementation of the control measures in MM-AQ-3 during construction would reduce the impact related to Valley Fever. Furthermore, the project would implement MM-AQ-4 in order to educate construction personnel and prevent the potential spread of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), better known as COVID-19.

Mitigation Measures

MM-AQ-3: Minimize Exposure to Potential Valley Fever-Containing Dust.

To minimize personnel and public exposure to potential Valley Fever-containing dust on and offsite, the following control measures shall be implemented during project construction:

 $^{^1}$ The highest 24-hour PM $_{10}$ and PM $_{2.5}$ concentration was modeled at UTM Zone 11 South, Easting: 379539.8, Northing: 3862794.96 for existing receptors and at UTM Zone 11 South, Easting: 379591.83, Northing: 3862730.47 for fenceline.

a. Equipment, vehicles, and other items shall be thoroughly cleaned of dust before they are moved offsite to other work locations.

- b. Wherever possible, grading and trenching work shall be phased so that earth-moving equipment is working well ahead or downwind of workers on the ground.
- c. The area immediately behind grading or trenching equipment shall be sprayed with water before ground workers move into the area.
- d. In the event that a water truck runs out of water before dust is sufficiently dampened, ground workers exposed to dust shall leave the area until a truck can resume water spraying.
- e. To the greatest extent feasible, heavy-duty earth-moving vehicles shall be closed-cab and equipped with a HEPA-filtered air system.
- f. Workers shall receive training in procedures to minimize activities that may result in the release of airborne *Coccidioides immitis* spores and recognize the symptoms of Valley Fever and shall be instructed to promptly report suspected symptoms of work-related Valley Fever to a supervisor. Evidence of training shall be provided to the Kern County Planning and Natural Resources Department within 5 days of the training session.
- g. A Valley Fever informational handout shall be provided to all onsite construction personnel. The handout shall, at a minimum, provide information regarding symptoms, health effects, preventative measures, and treatment of Valley Fever. Additional information and handouts can be obtained by contacting the Kern County Public Health Services Department.
- h. Onsite personnel shall be trained on the proper use of personal protective equipment, including respiratory equipment. National Institute for Occupational Safety and Health-approved respirators shall be provided to onsite personnel, upon request. When exposure to dust is unavoidable, affected workers shall be provided appropriate NIOSH-approved respiratory protection. If respiratory protection is deemed necessary, employers must develop and implement a respiratory protection program in accordance with the California Occupational Safety and Health Administration's Respiratory Protection standard (8 CCR 5144).

MM AQ-4: Prepare a COVID-19 Health and Safety Plan.

Prior to the issuance of grading permits, a COVID-19 Health and Safety Plan shall be prepared in accordance with the Kern County Public Health Services Department and Kern County Health Officer mandates. A copy of the COVID-19 Health and Safety Plan shall be submitted to the Kern County Planning and Natural Resources Department for review and approval.

MM AQ-5: Establish Valley Fever Fee.

Prior to the issuance of grading permits, a one-time fee shall be paid to the Kern County Public Health Services Department in the amount of \$3,200 for Valley Fever public awareness programs.

Impact AQ-4: Would the proposed project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The proposed project involves the construction and operation of a solar and BESS facility within the County of Kern. Project-related odor emissions would be minimal and would not affect a substantial number of people. During construction of the proposed project, diesel exhaust from construction equipment and activities associated with the application of architectural coatings or paving may produce discernible odors. These odors are typical of most construction sites. Such odors may be a temporary source of nuisance to the nearest sensitive receptor, but would not affect a substantial number of people. Furthermore, CCR Title 13, Section 2485 limits the idling of a vehicle's primary diesel engine to 5 minutes at any location. Compliance with this regulation would help further reduce detectable exhaust odors. These odors would not affect a substantial number of people because construction would be temporary, and construction-generated emissions dissipate rapidly with increasing distance from the source. Standard operation of the solar and BESS facility would not produce objectionable odors, and there would be no permanent impacts.

Impacts related to the creation of other emissions (such as odors) affecting a substantial number of people would be considered minor and less than significant.

3.1 Existing Setting

3.1.1 Global Climate Change

The phenomenon known as the *greenhouse effect* keeps the atmosphere near the Earth's surface warm enough for the successful habitation of humans and other life forms. GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), perfluorinated carbons (PFCs), sulfur hexafluoride (SF_6), and hydrofluorocarbons (HFCs), in addition to water vapor. These six gases are also identified as GHGs in Section 15364.5 of the State CEQA Guidelines.

Sunlight in the form of infrared, visible, and ultraviolet light passes through the atmosphere. Some of the sunlight striking the earth is absorbed and converted to heat, which warms the surface. The surface emits infrared radiation to the atmosphere, where some of it is absorbed by GHGs and reemitted toward the surface. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation absorbed before escaping into space, thus enhancing the greenhouse effect and amplifying the warming of the earth (Center for Climate and Energy Solutions 2011).

Increases in fossil fuel combustion and deforestation have increased concentrations of GHGs in the atmosphere exponentially since the Industrial Revolution. Rising atmospheric concentrations of GHGs in excess of natural levels enhance the greenhouse effect, which contributes to global warming of the earth's lower atmosphere. This warming induces large-scale changes in ocean circulation patterns, precipitation patterns, global ice cover, biological distributions, and other changes to the planetary system that are collectively referred to as *climate change*.

Unlike criteria air pollutants and TACs, GHGs are global pollutants. Criteria air pollutants and TACs occur locally or regionally, and local concentrations respond to locally implemented control measures. However, the long atmospheric lifetimes of GHGs allow them to be transported great distances from sources and become well-mixed, unlike criteria air pollutants, which typically exhibit strong concentration gradients away from point sources. GHGs and global climate change represent cumulative impacts; that is, GHG emissions contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change.

3.1.2 Principal Greenhouse Gases

The GHGs (i.e., CO_2 , CH_4 , N_2O , HFCs, PFCs, and SF_6) listed by the Intergovernmental Panel on Climate Change (IPCC; 2015) are discussed in this section in order of abundance in the atmosphere, and the principal characteristics surrounding these pollutants are discussed below. California law and the State CEQA Guidelines contain a similar definition of GHGs (Health and Safety Code Section 38505(g); 14 CCR 15364.5). Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic (human-made) sources. Consequently, the primary GHGs of concern associated with the project are CO_2 , CH_4 , and N_2O . Note

that HFCs, PFCs, and SF₆ are not discussed because those gases are primarily generated by manufacturing processes, which are not anticipated as part of the project.

- Carbon Dioxide (CO₂) enters the atmosphere through the burning of fossil fuels (i.e., oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). CO₂ is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
- Methane (CH₄) is emitted during the production and transport of coal, natural gas, and oil. CH₄
 also results from livestock and other agricultural practices and the decay of organic waste in
 municipal solid waste landfills.
- **Nitrous Oxide** (N₂O) is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

To simplify reporting and analysis, methods have been set forth to describe emissions of GHGs in terms of a single gas. The most commonly accepted method for comparing GHG emissions is the global warming potential (GWP) methodology, defined in the IPCC Fourth Assessment Report (AR4). IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of carbon dioxide equivalent (CO_2e), which compares the gas in question to that of the same mass of CO_2 (which has a GWP of 1 by definition). The GWP values used in this report are based on the AR4 and United Nations Framework Convention on Climate Change reporting guidelines and are defined in Table 3-1 (IPCC 2007). The AR4 GWP values are consistent with those used in CARB's 2019 California GHG inventory and CARB's 2017 Scoping Plan (CARB 2017, 2021b).

Table 3-1. Lifetimes, GWPs, and Abundances of Significant GHGs

Gas	GWP (100 years)	Lifetime (years) ¹	Atmospheric Abundance
CO ₂	1	50-200	400 ppm
CH ₄	25	9-15	1,834 ppb
N ₂ O	298	121	328 ppb

Sources: Myhre et al. 2013; Blasing 2016; IPCC 2007.

ppm = parts per million; ppb = parts per billion; ppt = parts per trillion

3.1.3 Greenhouse Gas Inventories

A *GHG inventory* is a quantification of all GHG emissions and sinks⁹ within a selected physical or economic boundary. GHG inventories can be performed on a large scale (e.g., for global and national entities) or on a small scale (e.g., for a particular building or person). Although many processes are difficult to evaluate, several agencies have developed tools to quantify emissions from certain sources.

To help contextualize the magnitude of potential project-related emissions, Table 3-2 outlines the most recent global, national, statewide, and local GHG inventories.

¹ Defined as the half-life of the gas.

⁹A GHG sink is a process, activity, or mechanism that removes a GHG from the atmosphere.

Table 3-2. Global, National, State, and Local GHG Emissions Inventories

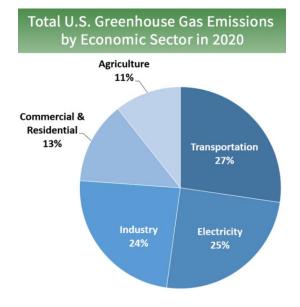
Emissions Inventory	CO ₂ e (metric tons)
2010 IPCC Global GHG Emissions Inventory	49,000,000,000
2020 EPA National GHG Emissions Inventory	5,981,400,000
2019 CARB State GHG Emissions Inventory	418,200,000
2005 County of Kern GHG Emissions Inventory	27,045,617

Sources: IPCC 2015; EPA 2022a; CARB 2021b; County of Kern 2012.

3.1.4 Sources of GHG Emissions

At a national level, the largest source of GHG emissions from human activity is burning fossil fuels for electricity, heat, and transportation. The primary sources of GHG emissions in the United States in 2020 are summarized in Figure 3-1. Transportation and electricity production accounted for 27 and 25 percent of U.S. GHG emissions in 2019, respectively. Over 90 percent of fuel used in transportation in the U.S. is petroleum based, whereas approximately 60 percent of electricity is generated from burning fossil fuels. Transportation and electricity are followed by the industry, commercial and residential, agriculture, and land use and forestry (EPA 2021a).

Figure 3-1. Total U.S. Greenhouse Gas Emissions by Economic Sector in 2020



Source: EPA 2022b.

In 2019, GHG emissions within California totaled 418.2 million metric tons of CO_2e . Within California, the transportation sector is the largest contributor, accounting for approximately 40 percent of the total statewide GHG emissions. The industrial sector is the second-largest contributor to GHG emissions in California, with 21 percent. GHG emissions from electric power declined from 2018 to 2019, due primarily to California's Renewables Portfolio Standard (RPS) and Cap-and-Trade

Program, which have caused large increases in the renewable energy resource use in the state. The 2019 State of California GHG emissions inventory is depicted in Figure 3-2.10

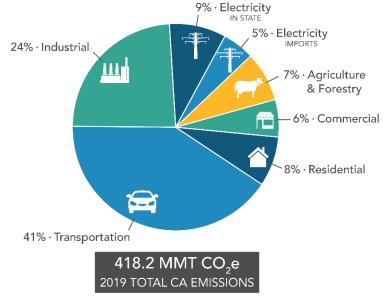


Figure 3-2. Total California Greenhouse Gas Emissions by Economic Sector in 2019

Source: CARB 2021b.

As depicted in Figure 3-2, in-state electricity production accounts for 9 percent of the state's overall GHG emissions inventory. The mix of renewable technologies related to electricity production within the State of California is composed of wind, solar PV, solar thermal, hydroelectric, geothermal, and biomass. As of 2019, California was ranked first in the nation as producer of electricity from solar, geothermal, and biomass resources. PV technology is a major constituent in meeting future state renewable energy goals, as well as goals to reduce the state's GHG emissions.

3.1.5 Effects of Global Climate Change

Climate change is a complex phenomenon that has the potential to alter local climatic patterns and meteorology. Although modeling indicates that climate change will result in sea-level rise (SLR) both globally and regionally, as well as changes in climate and rainfall, among other effects, there remains uncertainty with regard to characterizing precise local climate characteristics and predicting precisely how various ecological and social systems will react to any changes in the existing climate at the local level. Regardless of this uncertainty, it is widely understood that substantial climate change is expected to occur in the future, although the precise extent will take further research to define.

Research efforts coordinated through CARB, the California Energy Commission (CEC), the California EPA, the University of California system, and others are examining the specific changes to California's climate that will occur as the Earth's surface warms. Potential impacts include:

• SLR along the California coastline

¹⁰ The 2019 GHG inventory is the most recent inventory available at the time this technical report was produced; see www.arb.ca.gov/cc/inventory/data/data.htm.

- Extreme heat conditions
- An increase in heat-related human deaths, infectious diseases, and respiratory problems caused by deteriorating air quality
- Reduced snowpack and streamflow in the Sierra Nevada, affecting winter recreation and water supplies
- Potential increase in the severity of winter storms, affecting peak stream flows and flooding
- Changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield
- Changes in the distribution of plant and wildlife species due to changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.

3.2 Regulatory Framework

3.2.1 Federal

There is currently no federal overarching law specifically related to the reduction of GHG emissions. Under the Obama Administration, EPA had been developing regulations under the CAA pursuant to EPA's authority. There have also been settlement agreements between EPA, several states, and nongovernmental organizations to address GHG emissions from electric generating units and refineries, as well as EPA's issuance of an Endangerment Finding and a Cause or Contribute Finding. EPA has also adopted a Mandatory Reporting Rule and Clean Power Plan. Under the Clean Power Plan, EPA issued regulations to control CO₂ emissions from new and existing coal-fired power plants. However, on February 9, 2016, the Supreme Court issued a stay of these regulations pending litigation. Former EPA Administrator Scott Pruitt signed a measure to repeal the Clean Power Plan in October 2017. Therefore, no federal regulations specifically related to GHG emissions have been factored into the proposed project's impact analysis.

Fuel Economy Standards

Standards have been adopted at the federal level to increase the fuel economy of cars and light trucks. In 2012, the National Highway Traffic Safety Administration (NHTSA) established its final passenger car and light-truck Corporate Average Fuel Economy standards for model years 2017–2021, which, in model year 2021, would have required, on average, a combined fleet-wide fuel economy standard of 40.3–41.0 miles per gallon.

On August 2, 2018, NHTSA and EPA proposed to amend the fuel efficiency standards for passenger cars and light trucks and establish new standards covering model years 2021 through 2026 by maintaining the current model year 2020 standards through 2026 (Safer Affordable Fuel-Efficient [SAFE] Vehicles Rule). On September 19, 2019, EPA and NHTSA issued a final action on the One National Program Rule (NHTSA 2019), which is considered Part One of the SAFE Vehicles Rule and a precursor to the proposed fuel efficiency standards. The One National Program Rule enables

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¹¹ In *Coalition for Responsible Regulation, Inc., et al. v. EPA*, the U.S. Court of Appeals upheld EPA's authority to regulate GHG emissions under the CAA.

EPA/NHTSA to provide nationwide uniform fuel economy and GHG vehicle standards, specifically by (1) clarifying that federal law preempts state and local tailpipe GHG standards, (2) affirming NHTSA's statutory authority to set nationally applicable fuel economy standards, and (3) withdrawing California's CAA preemption waiver to set state-specific standards.

EPA and NHTSA published their decisions to withdraw California's waiver and finalize regulatory text related to the preemption on September 27, 2019 (84 Federal Register 51310). California, 22 other states, the District of Columbia, and two cities filed suit against Part One of the SAFE Vehicles Rule on September 20, 2019 (California et al. v. United States Department of Transportation et al., 1:19-cv-02826, U.S. District Court for the District of Columbia). On October 28, 2019, the Union of Concerned Scientists, Environmental Defense Fund, and other groups filed a protective petition for review after the federal government sought to transfer the suit to the U.S. Court of Appeals for the District of Columbia Circuit (Union of Concerned Scientists v. National Highway Traffic Safety Administration). The lawsuit filed by California and others is stayed pending resolution of the petition.

EPA and NHTSA published final rules to amend and establish national CO₂ and fuel economy standards on April 30, 2020 (Part Two of the SAFE Vehicles Rule) (85 Federal Register 24174). The revised rule changes the national fuel economy standards for light-duty vehicles from 50.4 to 40.5 miles per gallon in future years. This new rule rolls back California fuel efficiency standards for onroad passenger vehicles. California, 22 other states, and the District of Columbia filed a petition for review of the final rule on May 27, 2020, to challenge this new rule in the court system; it is reasonably foreseeable that the state will be successful in its legal challenges, for the reasons outlined in the state's lawsuit (Office of the Attorney General 2020). Furthermore, on January 20, 2021, President Biden signed an executive order directing the government to revise fuel economy standards with the goal of further reducing emissions. Most recently, on April 22, 2021, the Biden Administration proposed to formally roll back portions of the SAFE Rule, thereby restoring California's right to enforce more stringent fuel efficiency standards.

3.2.2 State

California has adopted statewide legislation addressing various aspects of climate change, GHG mitigation, and energy efficiency. Much of this establishes a broad framework for the state's long-term GHG and energy reduction goals and climate change adaptation program. The former and current governors of California have also issued several Executive Orders (EOs) related to the state's evolving climate change policy. Summaries of key policies, EOs, regulations, and legislation at the state level that are relevant to the project are provided below in chronological order.

Assembly Bill 1493—Pavley Rules (2002, amendments 2009)/Advanced Clean Cars (2011)

Known as Pavley I, AB 1493 provided the nation's first GHG standards for automobiles. AB 1493 required CARB to adopt vehicle standards that will lower GHG emissions from new light-duty autos to the maximum extent feasible beginning in 2009. Additional strengthening of the Pavley standards (referred to previously as *Pavley II* and now referred to as the *Advanced Clean Cars* measure) was adopted for vehicle model years 2017–2025 in 2012. Together, the two standards are expected to increase average fuel economy to roughly 54.5 miles per gallon in 2025.

In August 2022, the CARB board members voted to approve the Advanced Clean Cars II proposal, which will dramatically reduce emissions from passenger cars for model years 2026 through 2035. This requires an increasing proportion of new vehicles to be zero-emission vehicles, with the goal of 100 percent zero emission vehicles for new vehicles sold by 2035 (CARB 2022b).

CARB also adopted the Advanced Clean Truck Regulation to accelerate a large-scale transition of zero-emission medium-and-heavy-duty vehicles. The regulation requires the sale of zero-emission medium-and-heavy-duty vehicles as an increasing percentage of total annual California sales from 2024 to 2035. By 2035, zero-emission truck/chassis sales would need to be 55 percent of Class 2b – 3 truck sales, 75 percent of Class 4 – 8 straight truck sales, and 40 percent of truck tractor sales. By 2045, every new medium-and-heavy-duty truck sold in California will be zero-emission. Large employers, including retailers, manufacturers, brokers, and others, are required to report information about shipments and shuttle services to better ensure that fleets purchase available zero-emission trucks.

Senate Bills 1078/107/X 1-2—Renewables Portfolio Standard and Renewable Energy Resources Act (2002, 2006, 2011)

Senate Bills (SB) 1078 and 107, California's RPS, obligated investor-owned utilities, energy service providers, and Community Choice Aggregations to procure an additional 1 percent of retail sales per year from eligible renewable sources until 20 percent is reached by 2010. The California Public Utilities Commission and CEC are jointly responsible for implementing the program. SB X 1-2, called the California Renewable Energy Resources Act, obligates all California electricity providers to obtain at least 33 percent of their energy from renewable resources by 2020. As noted below, SB 350 increased the RPS to 50 percent for 2030, and SB 100 increased the RPS to 100 percent by 2045.

Executive Order S-03-05 (2005)

EO S-03-05 is designed to reduce California's GHG emissions to (1) 2000 levels by 2010; (2) 1990 levels by 2020; and (3) 80 percent below 1990 levels by 2050.

Assembly Bill 32—California Global Warming Solutions Act (2006)

AB 32 codified the state's GHG emissions target by requiring California's global warming emissions to be reduced to 1990 levels by 2020. Since being adopted, CARB, CEC, the California Public Utilities Commission, and the California Building Standards Commission have been developing regulations that will help the state meet the goals of AB 32 and EO S-03-05. The scoping plan for AB 32 identifies specific measures to reduce GHG emissions to 1990 levels by 2020 and requires CARB and other state agencies to develop and enforce regulations and other initiatives to reduce GHG emissions. The AB 32 Scoping Plan, first adopted in 2008, comprises the state's roadmap for meeting AB 32's reduction target. Specifically, the scoping plan articulates a key role for local governments by recommending that they establish GHG emissions-reduction goals for both their municipal operations and the community that are consistent with those of the state (i.e., approximately 15 percent below current levels) (CARB 2008).

CARB re-evaluated its emissions forecast in light of the economic downturn and updated the projected 2020 emissions to 545 million metric tons of carbon dioxide equivalent (MTCO $_2$ e). Two reduction measures (Pavley I and RPS [12–20 percent]) that were not previously included in the 2008 Scoping Plan baseline were incorporated into the updated baseline, further reducing the 2020

statewide emissions projection to 507 million MTCO₂e. The updated forecast of 507 million MTCO₂e is referred to as the AB 32 2020 Baseline. An estimated reduction of 80 million MTCO₂e is necessary to lower statewide emissions to the AB 32 target of 427 million MTCO₂e by 2020 (CARB 2014).

CARB approved the First Update to the Scoping Plan on May 22, 2014 (CARB 2014). The first update includes both a 2020 element and a post-2020 element. The 2020 element focuses on the state, regional, and local initiatives that are being implemented now to help the state meet the 2020 goal.

Executive Order S-01-07—Low Carbon Fuel Standard (2007)

EO S-01-07, the low-carbon fuel standard (LCFS), mandates: (1) that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020, with a reduction in the carbon content of fuel by a quarter of a percent starting in 2011; and (2) that an LCFS for transportation fuels be established in California. In September 2018, the LCFS regulation was amended to increase the statewide goal to a 20 percent reduction in carbon intensity of California's transportation fuels by 2030. The EO initiates a research and regulatory process at CARB. Note that the majority of the emissions benefits due to the LCFS arise from the production cycle (i.e., upstream emissions) of the fuel, rather than the combustion cycle (i.e., tailpipe). As a result, LCFS-related reductions are not included in this analysis of combustion-related emissions of CO_2 .

Tractor-Trailer Greenhouse Gas Regulation (2013)

CARB approved the 2013 Tractor-Trailer Greenhouse Gas Regulation to reduce GHG emissions by requiring the use of aerodynamic tractors and trailers that are also equipped with low rolling-resistance tires. The regulation applies to certain Class 8 tractors manufactured for use in California and is complemented with the parallel EPA and NHTSA heavy-duty truck standards. This regulation could reduce fuel consumption and GHG emissions from new heavy-duty trucks between 4 and 5 percent per year between 2014 and 2018 (EPA 2015).

Senate Bill 350 (2015)

Signed into law in October 2015, SB 350 (The Clean Energy and Pollution Reduction Act) requires CARB (in coordination with the CPUC and CEC) to coordinate and implement the following overarching goals:

- Increase the RPS to 50 percent of retail sales by 2030 and ensure grid reliability.
- Establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas end uses by 2030.
- Reduce GHG emissions in the electricity sector through the implementation of the above measures and other actions as modeled in their integrated resource plans (IRPs) to meet GHG emissions reductions planning targets in the IRP process. Load-serving entities and publicly owned utilities meet GHG emissions reductions planning targets through a combination of measures as described in IRPs. The IRPs will detail how each large utility will meet their customers resource needs, minimize price increases, reduce emissions, and ramp up the deployment of clean energy resources.

Senate Bill 32, California Global Warming Solutions Act of 2006, Emissions Limit, and Assembly Bill 197, State Air Resources Board, Greenhouse Gases, Regulations (2016)

SB 32 requires CARB to ensure that statewide GHG emissions are reduced to at least 40 percent below the 1990 level by 2030, consistent with the target set forth in EO B-30-15. The bill specifies that SB 32 will become operative only if AB 197 is enacted and becomes effective on or before January 1, 2017. AB 197 (1) creates requirements to form the Joint Legislative Committee on Climate Change Policies; (2) requires CARB to prioritize direct emission reductions from stationary sources, mobile sources, and other sources and consider social costs when adopting regulations to reduce GHG emissions beyond the 2020 statewide limit; (3) requires CARB to prepare reports on sources of GHGs, criteria air pollutants, and toxic air contaminants; (4) establishes 6-year terms for voting members of CARB; and (5) adds two legislators as non-voting members of CARB. Both bills were signed by Governor Brown in September 2016.

In December 2017, CARB approved the *2017 Climate Change Scoping Plan Update* (2017 Scoping Plan), which builds on the programs set in place as part of the previous Scoping Plan that was drafted to meet the 2020 reduction targets per AB 32. The 2017 Scoping Plan proposes meeting the 2030 goal by accelerating the focus on zero and near-zero technologies for moving freight, continued investment in renewables, greater use of low-carbon fuels including electricity and hydrogen, stronger efforts to reduce emissions of short-lived climate pollutants (CH₄, black carbon, and fluorinated gases), further efforts to create walkable communities with expanded mass transit and other alternatives to traveling by car, continuing the cap-and-trade program, and ensuring that natural lands become carbon sinks to provide additional emissions reductions and flexibility in meeting the target.

The 2017 Scoping Plan recommends that local governments aim to achieve community-wide efficiency of 6 MTCO₂e per capita by 2030 and 2 MTCO₂e per capita by 2050 to be used in local climate action planning. These efficiency targets would replace the "15 percent from 2008 levels by 2020" approach recommended in the initial Scoping Plan, which would allow for local governments to grow in a sustainable manner (CARB 2016). CARB (2022c) adopted the *2022 Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan) in November 2022 to identify a technologically feasible, cost-effective, and equity-focused path to achieve carbon neutrality by 2045, pursuant to AB 1279. The 2022 Scoping Plan extends and expands upon GHG reduction measures of the previous scoping plans and includes additional measures to capture and store atmospheric carbon through the state's natural and working lands and using a variety of mechanical approaches. The plan also assesses the state's progress towards meeting the GHG emissions reduction goal called for in SB 32.

Senate Bill 100 (2018)

SB 100 (De León, also known as the California Renewables Portfolio Standard Program: Emissions of Greenhouse Gases) was approved by the California legislature and signed by Governor Brown in September 2018. The bill implements the following goals:

- Increase the RPS to 50 percent of retail sales by 2026 (moved up by four years from SB 350).
- Increase the RPS to 60 percent of retail sales by 2030 (new 2030 target).
- Increase the RPS to 100 percent of retail sales by 2045 (carbon-free goal for 2045).

SB 100 is a legislative action that was signed into law after the 2017 Scoping Plan was adopted. The Scoping Plan modeling is based on the SB 350 target of 50 percent renewables by 2030. However, the new SB 100 target of 60 percent renewables by 2030 and 100 percent renewables by 2045 supersede the goals of SB 350 and is in included in the 2022 Scoping Plan (CARB 2022c).

Executive Order B-55-18 (2018)

Approved by the California legislature and signed by Governor Brown in September 2018, EO B-55-18 acknowledges the environmental, community, and public health risks posed by future climate change. It further recognizes the climate stabilization goal adopted by 194 states and the European Union under the Paris Agreement. Although the United States was not party to the agreement, California is committed to meeting the Paris Agreement goals and exceeding them wherever possible. Based on the worldwide scientific agreement that carbon neutrality must be achieved by the mid-twenty-first century, EO B-55-18 establishes a new state goal to achieve carbon neutrality as soon as possible, and no later than 2045, and to achieve and maintain net negative emissions thereafter.

The EO charges the CARB with developing a framework for implementing and tracking progress toward these goals. This EO extends EO S-3-05, but is only binding on state agencies. The 2022 Scoping Plan identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 or earlier, consistent with the goals of EO B-55-19.

Assembly Bill 1279 (2022)

AB 1279 (Health and Safety Code Section 38562.2) requires California to achieve net zero GHG emissions (i.e., reach a balance between the GHGs emitted and removed from the atmosphere) no later than 2045 and to achieve and maintain net negative GHG emissions from then on. It also mandates an 85 percent reduction in statewide anthropogenic GHG emissions (from 1990 levels) by 2045. AB 1279 recognizes that meeting these targets requires direct GHG emission reductions and removal of carbon dioxide from the atmosphere, as well as a nearly complete transition from fossil fuels. As such, the bill directs CARB to work with relevant state agencies to ensure scoping plan updates include measures that put California on a trajectory to achieve these targets. It also tasks CARB with implementing strategies that facilitate carbon dioxide removal solutions and carbon capture, utilization, and storage technologies. To evaluate the state's progress, AB 1279 requires that CARB report progress toward these targets to the legislature annually. By 2035, the bill directs CARB to assess the feasibility and tradeoffs of reducing statewide anthropogenic GHG emissions to 85 percent below 1990 levels by 2045 and report its findings to the legislature.

Senate Bill 1020 (2022)

SB 1020 (Laird, also known as the "Clean Energy, Jobs, and Affordability Act of 2022) was approved by the California legislature and signed by Governor Newsom in September 2022. The bill revises state policy to instead provide that renewable energy resources and zero-carbon resources supply 90 percent of all retail sales of electricity to California end-use customers by 2035, 95 percent of retail sales of electricity to California customers by 2040, and 100 percent of all retail sales of electricity to California customers by 2045.

Green Building Code and Title 24 Updates

CCR, Title 24 is referred to as the California Building Code. The code consists of a compilation of several distinct standards and codes related to building construction, including but not limited to plumbing, electrical, interior acoustics, energy efficiency, and handicap accessibility. Of relevance to GHG emissions reductions are the California Building Code's energy efficiency and green building standards as outlined below.

Part 6 - Energy Code

CCR, Title 24, Part 6 is the California Energy Efficiency Standards for Residential and Nonresidential Buildings (California Energy Code). The CEC updates the California Energy Code every 3 years with more stringent design requirements to reduce energy consumption, resulting in lower GHG emissions. The 2022 California Energy Code, which took effect on January 1, 2023, requires builders to use more energy-efficient building technologies to comply with requirements regarding energy use.

New construction and major renovations must demonstrate compliance with the current California Energy Code through submission and approval of a Title 24 Compliance Report to the local building permit review authority and the CEC. The compliance reports must demonstrate a building's energy performance through use of CEC approved energy performance software that shows iterative increases in energy efficiency given the selection of various heating, ventilation, and air conditioning; sealing; glazing; insulation; and other components related to the building envelope.

Part 11 - California Green Building Standards Code

The California Green Building Standards Code (CALGreen) was first added to Title 24 Part 11 in 2009 as a voluntary code, which then became mandatory effective January 1, 2011. The most recent 2022 CALGreen, which became effective January 1, 2023, institutes mandatory minimum environmental performance standards for all ground-up new construction of non-residential and residential structures. Local jurisdictions must enforce the minimum mandatory CALGreen standards and may adopt additional amendments for stricter requirements.

The 2022 CALGreen mandatory standards require the following:

- Outdoor water use requirements as outlined in local water efficient landscaping ordinances or current Model Water Efficient Landscape Ordinance standards, whichever is more stringent.
- Requirements for water conserving plumbing fixtures and fittings.
- 65 percent construction/demolition waste diverted from landfills.
- Infrastructure requirements for electric vehicle charging stations.
- Mandatory inspections of energy systems to ensure optimal working efficiency.
- Requirements for low-pollutant emitting exterior and interior finish materials such as paints, carpets, vinyl flooring and particleboards.

In addition to the mandatory CALGreen standards, the CALGreen code provides voluntary tiers for increased environmental performance standards, which can be adopted as mandatory measures by

local jurisdictions. Similar to the reporting procedure for demonstrating California Energy Code compliance in new buildings and major renovations, compliance with CALGreen mandatory requirements must be demonstrated through completion of compliance forms and worksheets.

3.2.3 Regional

Kern County General Plan

The Kern County General Plan, originally adopted on June 15, 2004, and last amended on September 22, 2009, contains the following policies with regard to GHGs (Kern County Department of Planning and Development Services 2009).

Land Use, Conservation, and Open Space Element—Air Quality

Policies

Due to the GHG co-benefit of implementing air quality policies and measures, those policies and measures from the *Kern County General Plan – Land Use, Conservation, and Open Space Element, Air Quality* chapter that are also relevant to GHG emissions have been outlined under the regional regulatory framework in Section 2.3, *Impacts and Mitigation Measures*, above.

Energy Element

Goal

Encourage safe and orderly commercial solar development.

Policies

Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.

2022 Regional Transportation Plan/Sustainable Communities Strategy

The Kern County Council of Governments adopted the *2022 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS)* on July 21, 2022. The RTP is updated every 4 years and serves as a blueprint for the region's transportation system, encompassing various modes including freight, intermodal, and aviation. The SCS is included to specifically address emissions reductions from passenger vehicle travel, including 9 percent per capita reductions by 2020 and 15 percent per capita by 2035 as compared to baseline year 2005 (Kern Council of Governments 2022). The plan contains seven core goals (Kern Council of Governments 2022), as follows.

- 1. Mobility—Improve the mobility of people and freight.
- 2. Accessibility—Improve accessibility to, and the economic wellbeing of, major employment and other regional activity centers.
- 3. Reliability—Improve the reliability and safety of the transportation system.
- 4. Efficiency—Maximize the efficiency and cost effectiveness of the existing and future transportation system.
- 5. Livability/Quality of Life—Promote livable communities and satisfaction of consumers with the transportation system.

- 6. Sustainability—Provide for the enhancement and expansion of the system, while minimizing effects on the environment.
- 7. Equity—Ensure an equitable distribution of the benefits among various demographics and user groups.

3.3 Impacts and Mitigation Measures

3.3.1 Thresholds of Significance

The State CEQA Guidelines and Kern County Environmental Checklist state that a project would have a significant impact on GHGs if it would:

- (A) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment (**Impact GHG-1**); or
- (B) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs (Impact GHG-2).

Kern County has not developed a quantified threshold of significance for GHG emissions, but a project found to contribute to a net decrease in GHG emissions and be consistent with the adopted implementation of the CARB 2017 Scoping Plan (CARB 2017) and the 2022 Scoping Plan (CARB 2022c) is presumed to have less-than-significant GHG impacts.

EKAPCD's March 2012 addendum to its CEQA Guidelines provides a process for determining individual and cumulative significance of project-specific GHG emissions on climate change. Projects not exempt from CEQA require quantification of project-specific GHG emissions on an annual scale. Projects that are found to emit fewer than 25,000 metric tons of GHGs per year (amortized construction and operation) would have a less-than-significant individual or cumulatively considerable impact on GHG emissions and would not require further CEQA review. Projects that would generate 25,000 metric tons of GHGs per year or greater can reduce their impact to less-than-significant levels by meeting conditions outlined in Section III of the EKAPCD CEQA GHG Policy (EKAPCD 2012).

3.3.2 Methodology

Project-related activities would result in short-term and long-term generation of GHG emissions during construction and operation. The proposed project would also indirectly contribute to a long-term reduction of GHG emissions by providing low-GHG electricity to California customers. The GHGs that were quantitatively estimated for the project include CO_2 , CH_4 , and N_2O .

In general, GHG emissions from the proposed project were quantified using the same methods described above in Chapter 2.3.2, *Methodology* for estimating criteria pollutants. Emissions of CO₂e were calculated using the GWP of each of these pollutants as found in the California Greenhouse Gas Emission Inventory, which is consistent with the IPCC AR4 (CARB 2021b; IPCC 2007).

GHG emissions from the project related to construction and operational activities were calculated as follows.

Short-term Construction-generated Emissions

- **Off-Road Equipment**: Off-road equipment would be required for several construction activities, including demolition, grading, and structure construction. Emission factors for off-road construction equipment (e.g., loaders, graders, bulldozers) were obtained from the CalEEMod (Version 2022.1) User's Guide appendix, which provides values per unit of activity (in grams per horsepower-hour) by calendar year. GHGs were estimated by multiplying the CalEEMod emission factors by the equipment inventory and activity assumptions (e.g., horsepower, hours of use per day) provided by the project applicant.
- On-Road Vehicles: On-road vehicles (e.g., passenger vehicles, pickup trucks, flatbed trucks) would be required for material deliveries to the project site, equipment hauling, onsite crew and material movement, and employee commuting. Exhaust emissions from on-road vehicles were estimated using the EMFAC2021 emissions model and activity data (miles traveled per day) provided by the project applicant. Emission factors for haul trucks are based on aggregated-speed emission rates for EMFAC's T7 Single Construction vehicle category. Emission factors for water trucks are based on aggregated-speed emission rates for EMFAC's T6 Instate Heavy vehicle category. According to transportation analysis, 155 vendor trips per day would be required for delivery of equipment and materials, including the solar panels for installation, for the duration of project construction (Ruettgers & Schuler 2022). Per the project applicant, the average trip length for vendor and material delivery trips from local and nonlocal sources is approximately 55 miles and includes approximately 0.25 mile of onsite unpaved road travel.

Water trucks would be required for several construction phases to provide fugitive dust control, with as many as 12 expected on a given day. According to the Water Supply Assessment prepared for the project, potential locations for water supply are located less than 5 miles and 6 miles south of the project site (ICF 2022). Additionally, there are onsite wells that the project may use to source all of the needed water supply for project-construction. However, for the purposes of providing a conservative analysis, a worst-case scenario was modeled with all necessary water coming from offsite. In total, the project would have a combined 167 heavy-duty truck trips between the vendor trips and water trucks, consistent with Table 1a of the Traffic Impact Analysis.

Emission factors for employee commute vehicles are based on a weighted average for all vehicle speeds for EMFAC's light-duty automobile/light-duty truck vehicle categories. Per the Traffic Impact Analysis, the average construction day would consist of 201 one-way employee commute trips based on an 18-month construction schedule. However, as the construction emissions analysis uses a conservative 12-month construction schedule, the employee commute trips were increased to an average of 302 one-way trips per day to accommodate the reduced schedule. According to the transportation analysis, approximately 50 percent of construction personnel will be hired from the local area, which includes the cities of Lancaster, Rosamond, and Mojave. It is anticipated that approximately 30 percent of the remaining construction personnel will temporarily relocate to one of these three cities for the duration of the project. The remaining 20 percent of construction personnel will be considered nonlocal and are anticipated to come from Bakersfield, Tehachapi, and other areas outside of Antelope Valley. Given this information,

it was assumed that the average trip length for employee travel would be approximately 26.5 miles (Ruettgers & Schuler 2022).

- **Electricity Consumption**: GHG emissions generated by electricity related to water demand during construction were quantified using activity data (e.g., MW hour [MWh]) provided by the project applicant and emission factors from SCE (2020). Based on information provided by the project applicant, total water use during construction would be approximately 200 acre-feet.
- **Joshua Tree Removal and Mulching**: The removal and mulching of up to 2,300 Joshua trees onsite would result in GHG emissions impacts related to reduced annual carbon sequestration and the one-time release of carbon stored in the trees, if mulched. The CO₂ sequestration rate and total stored CO₂ were quantified using the U.S. Forest Service's Center for Urban Forest Research Tree Carbon Calculator (USDA Forest Service 2018).

Long-term Operational Emissions

As mentioned above, during operation of the solar and BESS facility, there would be daily operational activities, as well as annual panel washing. GHG emissions would result from off-road equipment exhaust from pressure washers, on-road vehicle trip generation for water trucks for panel cleaning, employee trips, and electricity from water demand. Combustion exhaust was estimated using the same method above for criteria air pollutants, including CARB's EMFAC2021 model. Emission factors for the use of pressure washers were obtained from the CalEEMod (Version 2022.1) User's Guide appendix. Exhaust emissions from on-road vehicles were estimated using the EMFAC2021 emissions model and activity data (i.e., miles traveled per day) provided by the project applicant.

The GHG emissions generated from project operation would be displaced due to the renewable solar energy produced at the site. Emissions displacement was estimated using EPA's Emissions & Generation Resource Integrated Database (eGrid) and information on California's renewable and zero-carbon energy supply goals pursuant to SB 1020. Please refer to Appendix B for a complete list of operational assumptions.

- Off-Road Equipment: Pressure washers would be required for periodic panel washing at the project site during normal operations. Per the project applicant, it was assumed that panel washing would occur up to once per year and take approximately 3 months to complete, assuming use of four pressure washers per day. Emission factors for the use of the pressure washers were obtained from the CalEEMod (Version 2022.1) *User's Guide* appendix, which provides value per unit of activity (in grams per horsepower-hour) by calendar year. The CalEEMod default horsepower and load factors were used to estimate GHG emissions generation.
- On-Road Vehicles: On-road vehicles (e.g., pickup trucks, water trucks, passenger vehicles)
 would be required for delivery of water for panel washing, and employee commuting. Exhaust
 emissions from on-road vehicles were estimated using the EMFAC2021 emissions model and
 activity data (miles traveled per day) provided by the project applicant. Vendor trucks
 delivering potable water are based on aggregated speed emission rates for EMFAC's T7 Single
 Construction vehicle category.

It is anticipated that the panels will be washed once per year, using water from offsite sources and transported to the site in water trucks. Emission factors for hauling of water for panel washing are based on aggregated-speed emission rates for EMFAC's T6 In-State Heavy category.

Per the transportation analysis, it is anticipated the washing will use up to 8 acre-feet of water over a 3-month period. Assuming use of 5,000-gallon capacity trucks, nine water trucks per day would be required for the delivery of water during panel washing (Ruettgers & Schuler 2022). Water during operations is assumed to be provided from the same location as water for construction. According to the Water Supply Assessment prepared for the project, potential locations for water supply are located less than 5 miles and 6 miles south of the project site (ICF 2022). For the purposes of providing a conservative analysis, a one-way trip distance of 6 miles was assumed for delivery of water during panel cleaning.

Emission factors for employee commute vehicles are based on a weighted average for all vehicle speeds for EMFAC's Light-Duty Automobile/Light-Duty Truck vehicle categories. Per the project applicant, typical daily operation of the solar facility would require up to 15 full-time or part-time staff at the O&M facility located at the adjacent BigBeau Solar Project. As with project construction, employee travel distance was assumed to be 26.5 miles per trip.

- Energy Consumption: Energy sources include electricity consumption from electricity related to general water demand (e.g., pumping). Onsite GHG emissions generated by electricity related to water demand (i.e., pumping/conveyance) during normal operations were quantified using activity data (e.g., MWh) provided by the project applicant and emission factors from SCE, which is the known provider during operation. Based on information provided by the project applicant, total water use during operation would be approximately 11 acre-feet.
- **Energy Generation**: The proposed solar facility would generate renewable energy with no associated GHG emissions. Therefore, operation of the project would result in displaced GHG emissions due to the gradual switch from non-renewable GHG-generating energy to renewable energy.

Energy displacement and the subsequent emissions displacement from the proposed solar facility were calculated using EPA eGrid future year emission factors (EPA 2021b), EPA's 2019 energy mix for the California–Mexico Power Area (CAMX), and total electricity generation per year provided by the project applicant. The regional CAMX eGrid values were used to estimate energy generation within the region. CAMX energy mix and emission factors were extrapolated out to future years based on the renewable and zero-carbon energy supply goals for the state, pursuant to SB 1020 (i.e., 90 percent renewable or zero-carbon by 2035, 95 percent renewable or zero-carbon by 2040, and 100 percent renewable or zero-carbon by 2045). Total annual electricity generation was assumed to be 870,000 MWh/year.

3.3.3 Project Impacts

Impact GHG-1: Would the proposed project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Short-term Construction

Construction of the proposed project would result in temporary generation of GHG emissions related to off-road equipment use, on-road vehicle operations, and electricity from water use. Table 3-3 shows GHG emissions related to construction of the proposed project. Annual GHG emissions from project construction would be approximately $16,162 \, \text{MTCO}_2 \text{e}$. These emissions were amortized over the 35-year lifespan of the project, which totals approximately $462 \, \text{MTCO}_2 \text{e}$. These emissions were added to operational emissions for comparison to EKAPCD's GHG threshold.

Table 3-3. Estimated Short-term Construction-related GHG Emissions

Phase	Construction GHG Emissions (Metric tons) ^a
Move On	219
Site Preparation and Grading	1,003
Access Road Improvements	392
Internal Roads Construction	126
Solar Array Structural, Underground and Panel Installation, Battery Storage	13,153
Electrical Substation and Microwave Tower Construction	261
Generation Tie Line Construction	403
Joshua Tree Removal and Mulching	606
Total Construction Emissions	16,162
Amortized (35-Year Project Life)	462

Source: ICF Emissions Modeling (Appendix B).

Long-term Operation

Once operational, the proposed project would result in GHG emissions from resource consumption associated with periodic off-road equipment use for panel washing, on-road vehicle operations, and electricity from water use, while providing renewable energy generation that would offset electricity produced by the statewide grid and support statewide clean energy goals. The total effect of the project is the net change between operations sources generated and emissions displaced by the project.

Per the project applicant, the 270-MW PV facility is expected to generate approximately 870,000 MWh/year. This renewable energy generated by the proposed project would displace GHG emissions that would be otherwise generated in the electrical grid by nonrenewable resources. Because additional renewable resources will be integrated into the statewide electrical grid as a result of the renewable and zero-carbon energy supply goals of the state, the annual displaced emissions achieved by the project would decline as a function of time (i.e., reductions per MWh would reduce as the grid gets cleaner, meaning the emissions that are displaced would reduce over time). Lifetime GHG reductions were quantified assuming a 35-year design life for the panels and linear integration of additional renewables into the statewide grid, up to 100 percent by 2045, pursuant to SB 1020. The net effect on operational emissions on both an annual (i.e., opening year) basis and over the project's 35-year lifetime is presented in Table 3-4 and Table 3-5, respectively. Overall operation of the proposed project is estimated to displace approximately 30,788 MTCO $_2$ e of emissions annually on average and a total of approximately 1,077,571 MTCO $_2$ e of emissions over its 35-year lifetime. Please refer to Appendix B for further detail on energy displacement calculations, including emission factors (i.e., pounds of CO $_2$ e/MWh).

a Totals may not add up due to rounding.

Table 3-4. Estimated Annual Greenhouse Gas Emissions from Project Operation in 2025 (metric tons per year)

Source	Annual GHG Emissions (MTCO2e per year)
Daily Operations	100
Periodic Panel Washing	109
Electricity from Water Demand	9
Water Hauling	17
Potable Water Deliveries	5
Total Annual Operational Emissions ^a	241
Amortized Construction	462
Total Annual Project Emissions ^a	702
Annual displaced emissions	30,788
Net Emissions	-30,085
EKAPCD Thresholds	25,000
Exceed Threshold?	No

^a Totals may not add up due to rounding.

Table 3-5. Estimated Total Greenhouse Gas Emissions from Project Lifetime Operation (metric tons)

Source	GHG Emissions (MTCO2e over Project Life) ^c
Total Operational Emissions ^a	8,423
Total Construction Emissions	16,162
Total Project Emissions ^b	24,585
Total Displaced Emissions	1,077,571
Net Emissions ^b	-1,052,986

^a Total Operational Emissions are based on opening year operational GHG emissions (Table 3.3-2) multiplied by 35.

As shown in Table 3-4, daily operations, periodic panel washing, and water demand during operation would generate $241 \, \text{MTCO}_2\text{e}$ per year. Together with amortized construction, the total annual GHG emissions would be approximately $702 \, \text{MTCO}_2\text{e}$. The renewable energy generated by the project would offset about $30,788 \, \text{MTCO}_2\text{e}$ per year of grid-supplied electricity, resulting in an annual net GHG reduction of approximately $30,085 \, \text{MTCO}_2\text{e}$. As shown in Table 3-5, over the 35-year lifetime of the project, emissions would total approximately $24,585 \, \text{MTCO}_2\text{e}$. The renewable energy generated during the 35 years of project operation would offset an estimated $1,077,571 \, \text{MTCO}_2\text{e}$ of grid-supplied electricity. These displaced emissions would result in a total net GHG reduction of approximately $1,052,986 \, \text{MTCO}_2\text{e}$ over the project life.

Given that the proposed project would result in a net decrease of CO_2e emissions, impacts related to the generation of GHG emissions, either directly or indirectly, that may have a significant impact on the environment would be considered less than significant.

^b Average MTCO₂e that would be displaced annually, over the 35-year project life.

b Totals may not add up due to rounding.

 $^{^{\}text{c}}\textsc{Total}\ \textsc{MTCO}_{2}\textsc{e}$ that would be displaced over the 35-year project life.

Impact GHG-2: Would the proposed project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

AB 32 and SB 32 establish statewide goals for reducing GHG emissions to 1990 levels by 2020 and 40 percent below 1990 levels by 2030, respectively. CARB adopted the AB 32 Scoping Plan as a framework for achieving AB 32 goals. The Scoping Plan outlines a series of technologically feasible and cost-effective measures to reduce statewide GHG emissions. Many of these strategies have been extended as part of the 2022 Scoping Plan to achieve SB 32 and carbon neutrality by 2045.

The 2022 Scoping Plan states that the development of California's renewable and zero-carbon energy supply goals are a key sector for the State's goal in achieving carbon neutrality by 2045. As discussed above in Section 3.2.2, *State*, SB 1020 revised California's renewable and zero-carbon energy supply goals to 90 percent by 2035, 95 percent by 2040, and 100 percent by 2045. The renewable and zero-carbon energy supply goals promote multiple objectives, including diversifying the electricity supply. Increasing the renewable energy supply toward 100 percent zero-carbon by 2045 is designed to accelerate the transformation of the electricity sector, including investment in the transmission infrastructure and system changes to allow integration of large quantities of intermittent wind and solar generation. The proposed project would add renewable solar-generated energy to the electricity supply and result in an emissions benefit (see Tables 3-4 and 3-5). Therefore, the proposed project would be consistent with the renewable and zero-carbon energy supply goals of the 2022 Scoping Plan.

Additionally, the project would not exceed EKAPCD's 25,000 MTCO₂e project threshold. Given that Kern County has not yet adopted a GHG-reduction plan, there are no other measures or policies applicable to the proposed project. Accordingly, impacts related to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs would be less than significant.

County of Kern	Chapter 3: Greenhouse Gases and Climate Change
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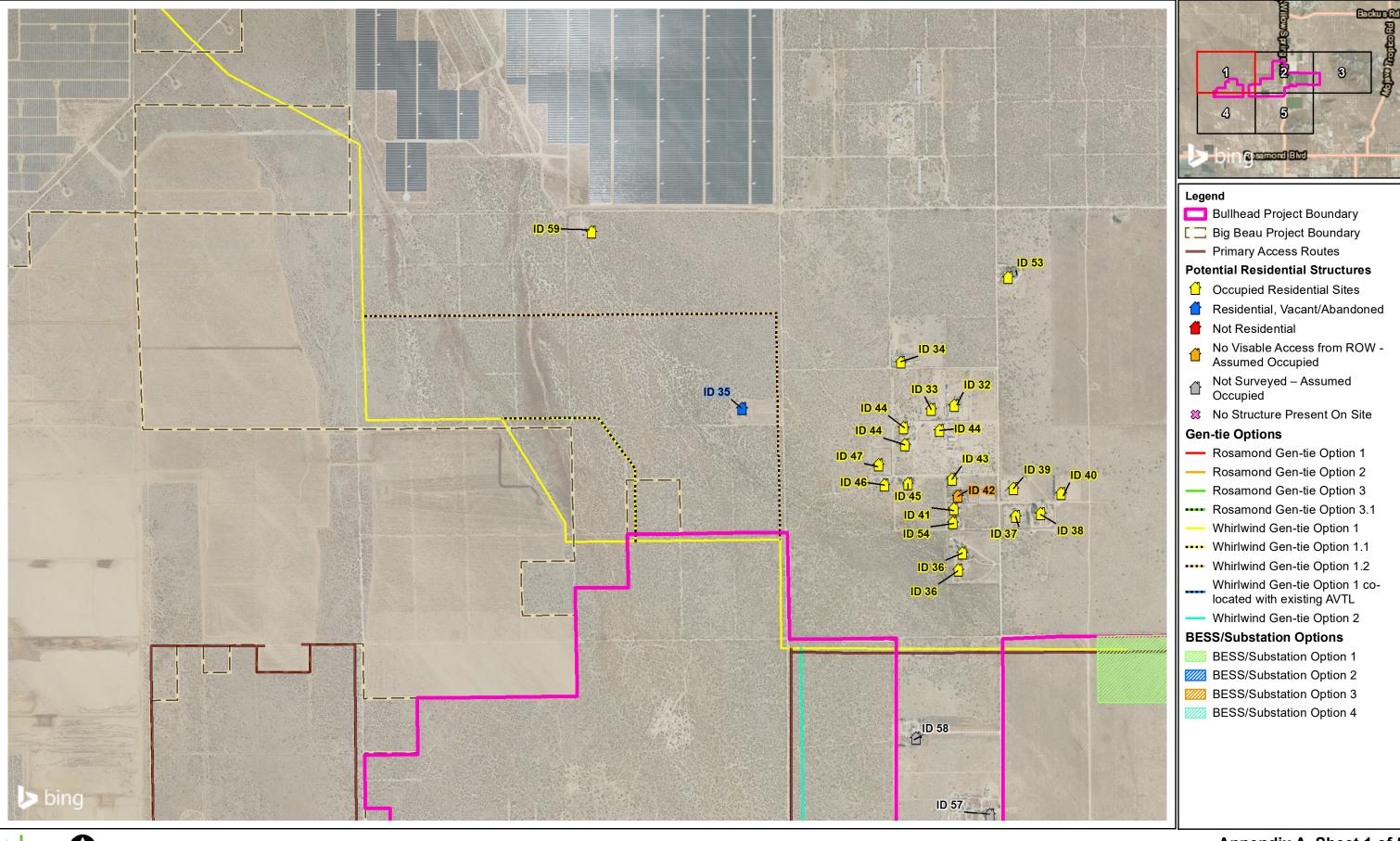
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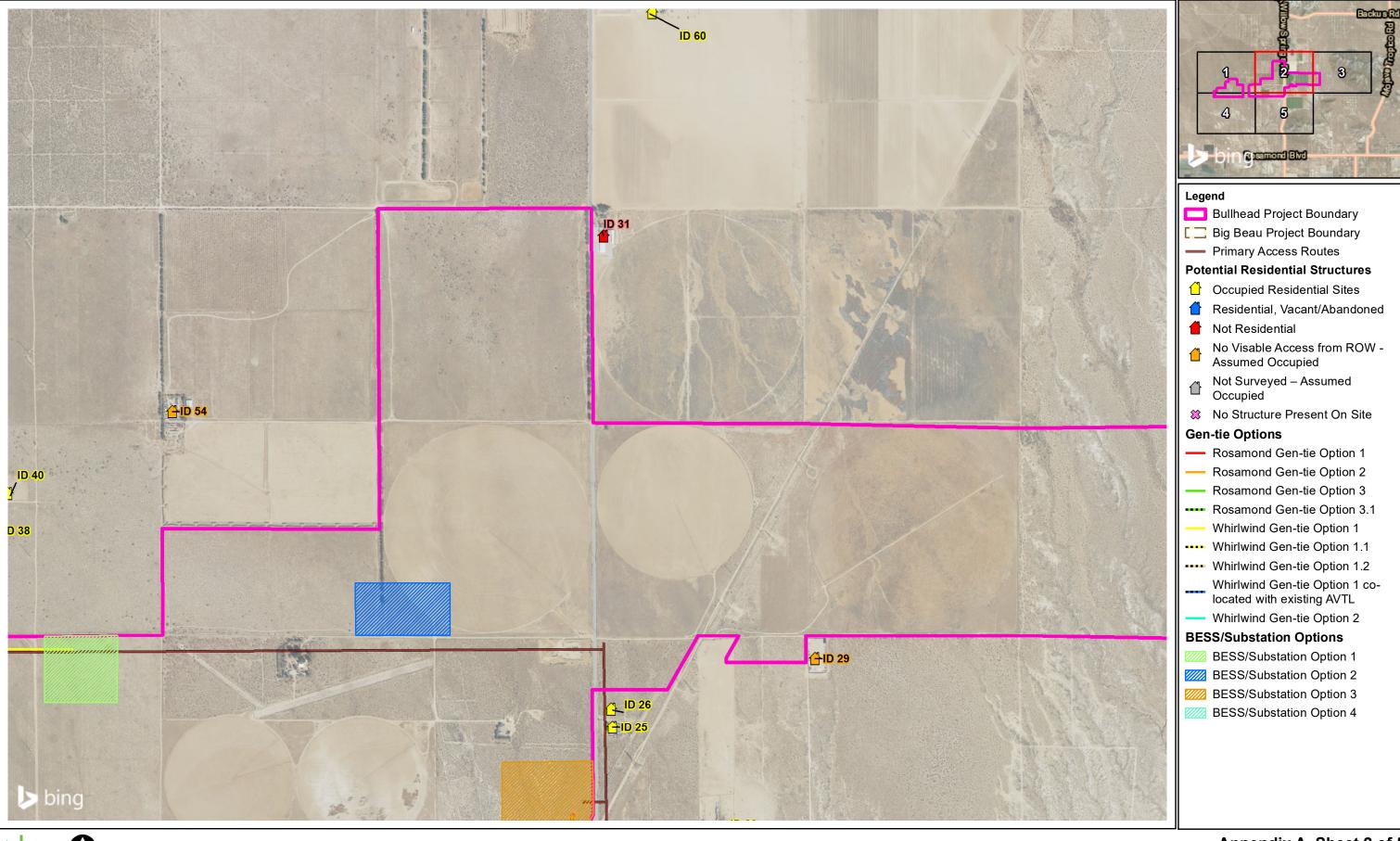
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Appendix A **Survey of Nearby Structures and Residences**

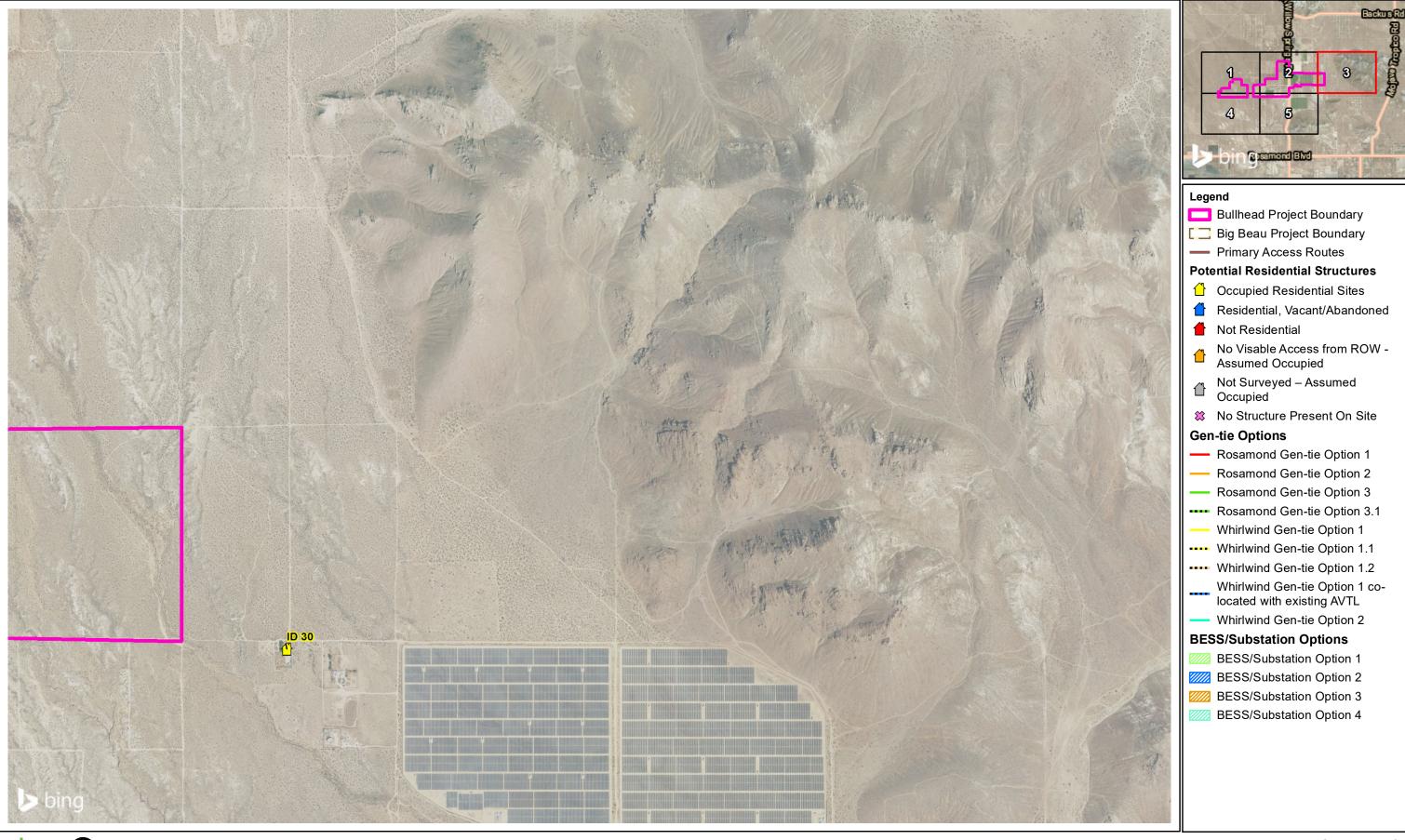
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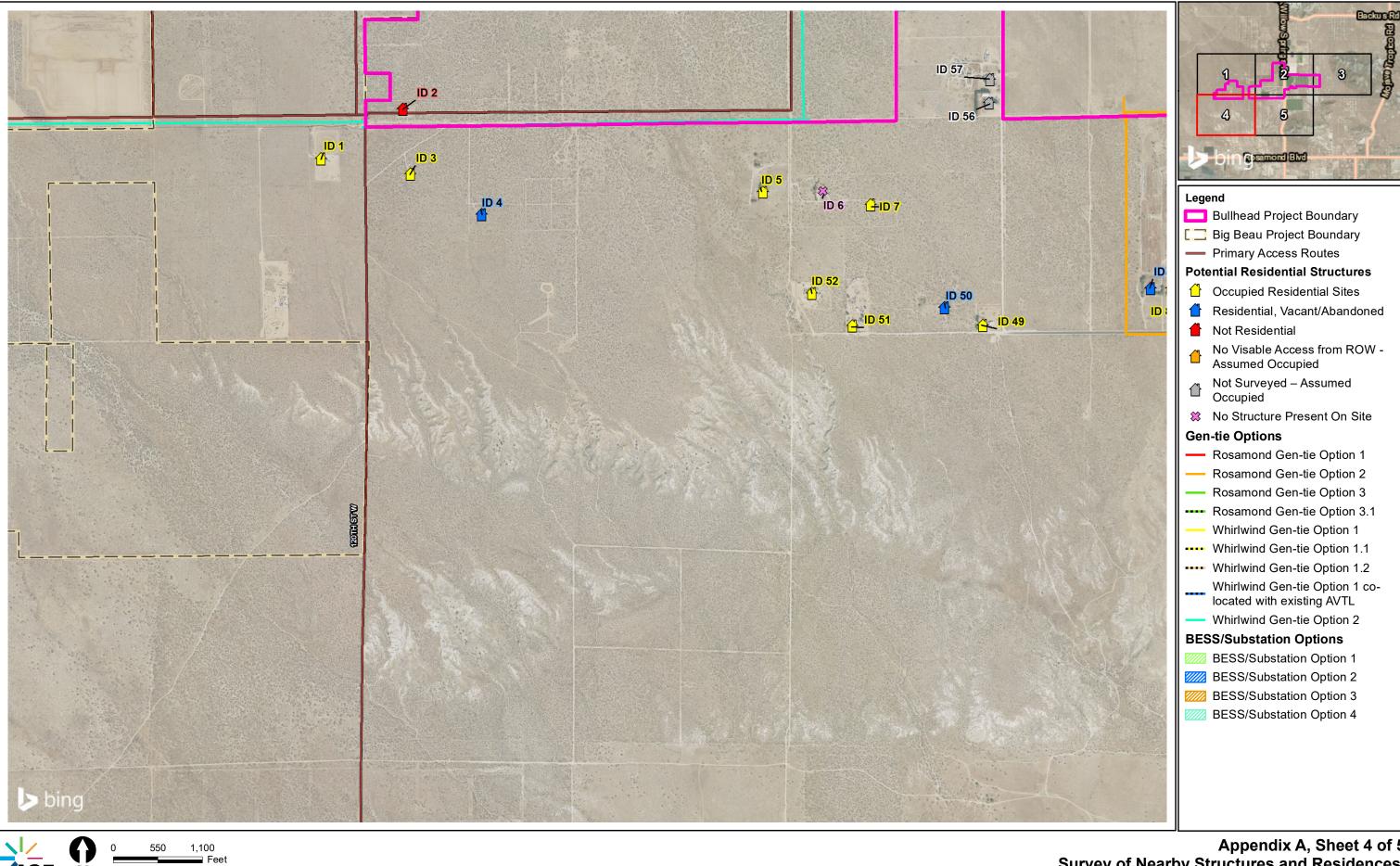




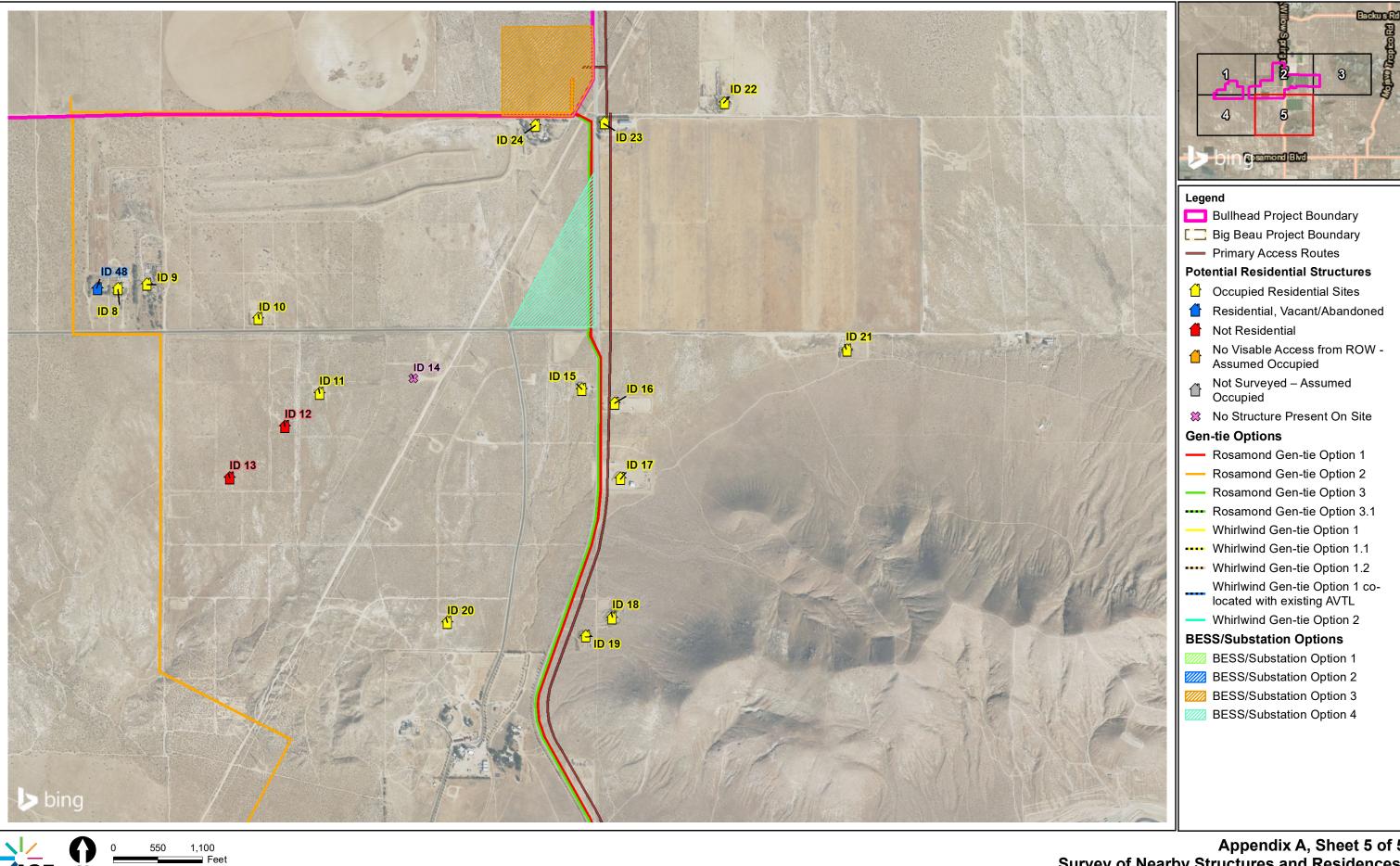












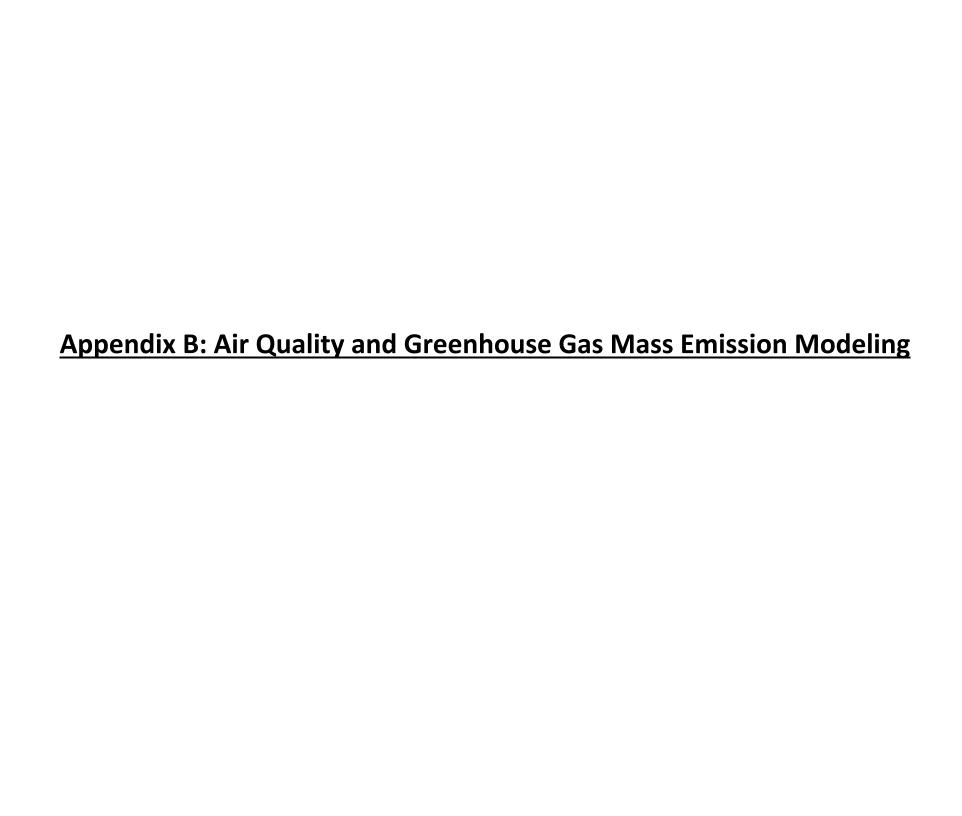


Appendix A, Sheet 5 of 5 **Survey of Nearby Structures and Residences Bullhead Solar**

Appendix B

Air Quality and Greenhouse Gas Calculation Sheets

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Summary of Total Emissions - Mitigated and Controlled Fugitive Dust

By Year (not including carbon loss)

		Tons per year					Metric tons per year							
Year	ROG	NOX	CO	PM10 E	PM10 D	PM 10 T	PM2.5 E	PM2.5 D	PM2.5 T	SO2	CO2	CH4	N2O	CO2e
2024	2	41	50	1	24	25	1	4	4	0	15,125	0.3	1.3	15,534
Total	2	41	50	1	24	25	1	4	4	0	15,125	0.3	1.3	15,534

By Phase (including carbon loss)

		l ons per year										Metric tons per year					
Phase	Phase Name	ROG	NOX	CO	PM10 E	PM10 D	PM 10 T	PM2.5 E	PM2.5 D	PM2.5 T	SO2	CO2	CH4	N2O	CO2e		
Phase1	Move On	0	1	1	0	0	0	0	0	0	0	218	0.0	0.0	219		
Phase2	Site Preparation & Grading	0	5	6	0	1	1	0	0	1	0	1,000	0.0	0.0	1,003		
Phase3	New Access Road Construction	0	2	2	0	0	0	0	0	0	0	390	0.0	0.0	392		
Phase4	Internal Roads Construction	0	1	1	0	0	0	0	0	0	0	126	0.0	0.0	126		
Phase5	Solar Array Structural, Underground & Panel Installation, Battery Storage	2	30	35	1	23	23	1	3	4	0	12,751	0.2	1.3	13,153		
Phase6	Electrical Substation & Microwave Tower Construction	0	1	2	0	0	0	0	0	0	0	260	0.0	0.0	261		
Phase7	Generation Tie Line Construction	0	2	3	0	0	0	0	0	0	0	402	0.0	0.0	403		
Tree Removal/ C	O2 loss	-										606			606		
Total Net Emission	ons	2	41	50	1	24	25	1	4	4	0	15,752	0.3	1.4	16,162		
		_				_					Amortized (35-year)	450	0.0	0.0	462		

Summary of Total Fuel Consumption

Year	Gallons (diesel/gasoline)
2024	1,484,922
Total	1,484,922

Summary of Total kWh Usage

Year	kWh	
2024	724,041	
Total	724.041	

1

Bullhead Solar Project

Summary of Construction Assumptions

Schedule							Total Vehicles Per day		Av	verage c	one-way t	rip length
Phase No.	Activity	Duration (month)	Number of Days	Start Date	End Date	Water Trucks ¹	Vendor/Haul Trucks	Employees	Water Trips	6	miles	(1 of those miles unpaved)
Phase1	Move On	1	21	1/1/2024	1/30/2024				Vendor Trips	55	miles	(0.25 of those miles unpaved)
Phase2	Site Preparation & Grading	4	88	1/1/2024	5/1/2024				Worker Trips	26.5	miles	(1 of those miles unpaved)
Phase3	New Access Road Construction	2	45	1/1/2024	3/1/2024							
Phase4	Internal Roads Construction	2	45	1/1/2024	3/1/2024							
Phase5	Solar Array Structural, Underground & Panel Installation, Battery Storage	12	261	1/1/2024	12/31/2024	12	155	302				
Phase6	Electrical Substation & Microwave Tower Construction	3	65	1/1/2024	4/1/2024							
Phase7	Generation Tie Line Construction	4	86	1/1/2024	4/30/2024							
1	2	3	4	5	6	7	8	9	_			
Grading	Phase 2, Site Preparation & Grading											

Phase 5, Solar Array Structural, Underground & Panel Installation, Battery Storage Water Use

Acre-feet: 200 Provided in WSA preprared for Project (ICF June 2021) Gallons:

Demolition Phase 2, Site Preparation & Grading 7079 Total SF

SF per day	80
Equipment	
Phase No.	Type of Equipmer

665

88

Total Acres:

Days of Demo

Equipment				
Phase No.	Type of Equipment	Number of Pieces	Hours of Operation	HP
	Forklifts	6	8	89
Phase 1: Move On	Generator Sets	6	8	84
	Graders	6	8	187
	Carts/ATVs	8	8	88
	Rollers	3	8	80
	Rubber Tired Dozers	3	8	247
	Scrapers	3	8	367
	Tractors/Loaders/Backhoes	6	8	97
	Trenchers	3	8	78
	Graders	6	8	187
	Other Construction Equipment	4	8	172
Phase 2: Site Preparation	Carts/ATVs	8	8	88
	Rollers	6	8	80
& Grading	Rubber Tired Dozers	6	8	247
	Scrapers	4	8	367
	Tractors/Loaders/Backhoes	6	8	97
	Graders	6	8	187
	Other Construction Equipment	3	8	172
Phase 3: New Access	Carts/ATVs	3	8	88
Road Construction	Rollers	6	8	80
	Rubber Tired Dozers	4	8	247
	Scrapers	4	8	367
	Graders	4	8	187
Phase 4: Internal Roads	Carts/ATVs	3	8	88
Construction	Rollers	4	8	80
	Tractors/Loaders/Backhoes	4	8	97
	Forklifts	8	8	89
	Generator Sets	15	8	84
Phase 5: Solar Array	Carts/ATVs	12	8	88
Structural, Underground		3	8	80
& Panel Installation,	Skid Steer Loaders	12	8	65
Battery Storage	Post Drivers	15	8	65
buttery storage	Tractors/Loaders/Backhoes	3	Ω	97
	Trenchers	7	8	78
	Aerial Lifts	4	8	63
	Cranes	2	8	231
Phase 6: Electrical	Forklifts	3	_	89
Substation & Microwave		3 2	8	
Tower Construction	Carts/ATVs Tractors/Leaders/Backhoos	3	ð o	88
	Tractors/Loaders/Backhoes	/	8	97 70
	Trenchers April Lifts	/	8	78
	Aerial Lifts	4	8	63
	Cranes	4	8	231
Phase 7: Generation Tie	Crawler Tractors	3	8	212
Line Construction	Forklifts	3	8	89
	Generator Sets	3	8	84
	Carts/ATVs	3	8	88
	Tractors/Loaders/Backhoes	4	8	97

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Appendix B: Air Quality and Greenhouse Gas Mass Emission Modeling

Offroad Calculations - Mitigated and Controlled Fugitive Dust

																202	24								
									3	4	5 Pounds	6 per dav	7	8			Tons n	er year			9 M	10 letric ton	11 s per yea	ır	Gal p
Code	Equip	#/day	hrs/day	CMOD	HP Bin	HP	LF Fuel	Concat	ROG	NOX		PM10	PM2.5	1 SO2	ROG	NOX	СО	PM10	PM2.5	SO2	CO2	CH4		CO2e	yea
hase1	Forklifts	6	8	Forklifts	100	89	0.20 Diesel	Forklifts100	0.2	4.4	7.0	0.2	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	9.46	0.0	0.0	9.5	927
hase1	Generator Sets	6	8	Generator Sets	75	84	0.74 Diesel	Generator Sets75	0.6	18.0	24.3	0.1	0.1	0.0	0.0	0.2	0.3	0.0	0.0	0.0	35.61	0.0	0.0	35.7	348
hase1	Graders	6	8	Graders	175	187	0.41 Diesel	Graders175	0.7	18.8	21.1	0.7	0.6	0.0	0.0	0.2	0.2	0.0	0.0	0.0	40.80	0.0	0.0	40.9	399
Phase1	Carts/ATVs	8	8	Other General Industrial Equipment	100	88	0.34 Diesel	Other General Industrial Equipment100	0.4	9.8	15.6	0.5	0.4	0.0	0.0	0.1	0.2	0.0	0.0	0.0	21.25	0.0	0.0	21.3	208
Phase1	Rollers	3	8	Rollers	75	80	0.38 Diesel	Rollers75	0.1	4.4	6.0	0.2	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	8.09	0.0	0.0	8.1	793
Phase1	Rubber Tired Dozers	3	8	Rubber Tired Dozers	300	247	0.40 Diesel	Rubber Tired Dozers300	0.5	12.1	13.6	0.5	0.4	0.0	0.0	0.1	0.1	0.0	0.0	0.0	26.50	0.0	0.0	26.6	259
Phase1	Scrapers Tractors/Loaders/Backhoes	3	8	Scrapers	300	367 97	0.48 Diesel	Scrapers300	0.8	21.6	24.2	0.8 0.4	0.7	0.0	0.0	0.2	0.3	0.0 0.0	0.0	0.0 0.0	46.96	0.0	0.0	47.1 10.1	460
Phase1 Phase1	Trenchers	o د	8	Tractors/Loaders/Backhoes Trenchers	100 75	97 78	0.37 Diesel 0.50 Diesel	Tractors/Loaders/Backhoes100 Trenchers75	0.3 0.2	8.8 5.7	14.1	0.4	0.4 0.2	0.0 0.0	0.0 0.0	0.1 0.1	0.1 0.1	0.0	0.0 0.0	0.0	19.04 10.40	0.0 0.0	0.0 0.0	19.1 10.4	186 101
Phase2	Graders	6	ο 2	Graders	175	78 187	0.41 Diesel	Graders175	0.2	18 R	7.0 21.1	0.2	0.6	0.0	0.0	0.1	0.1	0.0	0.0	0.0	170.96	0.0	0.0	171.5	1674
Phase2	Other Construction Equipment	4	8	Other Construction Equipment	175	172	0.41 Diesel	Other Construction Equipment175	0.7	11.8	13.3	0.7	0.4	0.0	0.0	0.5	0.6	0.0	0.0	0.0	107.56	0.0	0.0	107.9	1053
Phase2	Carts/ATVs	8	8	Other General Industrial Equipment	100	88	0.34 Diesel	Other General Industrial Equipment100	0.4	9.8	15.6	0.5	0.4	0.0	0.0	0.4	0.7	0.0	0.0	0.0	89.04	0.0	0.0	89.3	872
Phase2	Rollers	6	8	Rollers	75	80	0.38 Diesel	Rollers75	0.3	8.8	11.9	0.4	0.3	0.0	0.0	0.4	0.5	0.0	0.0	0.0	67.81	0.0	0.0	68.0	664
Phase2	Rubber Tired Dozers	6	8	Rubber Tired Dozers	300	247	0.40 Diesel	Rubber Tired Dozers300	0.9	24.3	27.2	0.9	0.8	0.1	0.0	1.1	1.2	0.0	0.0	0.0	222.10	0.0	0.0	222.9	2175
Phase2	Scrapers	4	8	Scrapers	300	367	0.48 Diesel	Scrapers300	1.1	28.8	32.3	1.1	1.0	0.1	0.0	1.3	1.4	0.0	0.0	0.0	262.40	0.0	0.0	263.3	2570
Phase2	Tractors/Loaders/Backhoes	6	8	Tractors/Loaders/Backhoes	100	97	0.37 Diesel	Tractors/Loaders/Backhoes100	0.3	8.8	14.1	0.4	0.4	0.0	0.0	0.4	0.6	0.0	0.0	0.0	79.78	0.0	0.0	80.1	781
Phase3	Graders	6	8	Graders	175	187	0.41 Diesel	Graders175	0.7	18.8	21.1	0.7	0.6	0.0	0.0	0.4	0.5	0.0	0.0	0.0	87.42	0.0	0.0	87.7	856
Phase3	Other Construction Equipment	3	8	Other Construction Equipment	175	172	0.42 Diesel	Other Construction Equipment175	0.3	8.9	9.9	0.3	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.0	41.25	0.0	0.0	41.4	404
Phase3	Carts/ATVs	3	8	Other General Industrial Equipment	100	88	0.34 Diesel	Other General Industrial Equipment100	0.1	3.7	5.9	0.2	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	17.07	0.0	0.0	17.1	167
Phase3	Rollers	6	8	Rollers	75	80	0.38 Diesel	Rollers75	0.3	8.8	11.9	0.4	0.3	0.0	0.0	0.2	0.3	0.0	0.0	0.0	34.68	0.0	0.0	34.8	339
Phase3	Rubber Tired Dozers	4	8	Rubber Tired Dozers	300	247	0.40 Diesel	Rubber Tired Dozers300	0.6	16.2	18.1	0.6	0.6	0.0	0.0	0.4	0.4	0.0	0.0	0.0	75.72	0.0	0.0	76.0	741
Phase3	Scrapers	4	8	Scrapers	300	367	0.48 Diesel	Scrapers300	1.1	28.8	32.3	1.1	1.0	0.1	0.0	0.6	0.7	0.0	0.0	0.0	134.18	0.0	0.0	134.6	1314
Phase4	Graders	4	8	Graders	175	187	0.41 Diesel	Graders175	0.5	12.5	14.1	0.5	0.4	0.0	0.0	0.3	0.3	0.0	0.0	0.0	58.28	0.0	0.0	58.5	570
hase4	Carts/ATVs	3	8	Other General Industrial Equipment	100	88	0.34 Diesel	Other General Industrial Equipment100	0.1	3.7	5.9	0.2	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	17.07	0.0	0.0	17.1	167
hase4	Rollers	4	8	Rollers	75	80	0.38 Diesel	Rollers75	0.2	5.9	7.9	0.2	0.2	0.0	0.0	0.1	0.2	0.0	0.0	0.0	23.12	0.0	0.0	23.2	226
hase4	Tractors/Loaders/Backhoes	4	8	Tractors/Loaders/Backhoes	100	97	0.37 Diesel	Tractors/Loaders/Backhoes100	0.2	5.9	9.4	0.3	0.3	0.0	0.0	0.1	0.2	0.0	0.0	0.0	27.20	0.0	0.0	27.3	266
hase5	Forklifts	8	8	Forklifts	100	89	0.20 Diesel	Forklifts100	0.2	5.8	9.3	0.3	0.3	0.0	0.0	0.8	1.2	0.0	0.0	0.0	156.85	0.0	0.0	157.4	1536
Phase5	Generator Sets	15	8	Generator Sets	75	84	0.74 Diesel	Generator Sets75	1.5	45.1	60.8	0.2	0.2	0.1	0.2	5.9	7.9	0.0	0.0	0.0	1106.45	0.0	0.0	1,110.2	1083
Phase5	Carts/ATVs	12	8	Other General Industrial Equipment	100	88	0.34 Diesel	Other General Industrial Equipment100	0.6	14.7	23.4	0.7	0.6	0.0	0.1	1.9	3.1	0.1	0.1	0.0	396.12	0.0	0.0	397.5	3879
Phase5	Rollers	3	8	Rollers	75	80	0.38 Diesel	Rollers75	0.1	4.4	6.0	0.2	0.2	0.0	0.0	0.6	0.8	0.0	0.0	0.0	100.57	0.0	0.0	100.9	985
Phase5	Skid Steer Loaders	12	8	Skid Steer Loaders	75	65	0.37 Diesel	Skid Steer Loaders75	0.5	13.9	18.8	0.6	0.5	0.0	0.1	1.8	2.5	0.1	0.1	0.0	315.47	0.0	0.0	316.6	3089
Phase5	Post Drivers	15	8	Skid Steer Loaders	75	65	0.37 Diesel	Skid Steer Loaders75	0.6	17.4	23.5	0.7	0.6	0.0	0.1	2.3	3.1	0.1	0.1	0.0	394.34	0.0	0.0	395.7	3862
Phase5	Tractors/Loaders/Backhoes	3	8	Tractors/Loaders/Backhoes	100	97	0.37 Diesel	Tractors/Loaders/Backhoes100	0.2	4.4	7.0	0.2	0.2	0.0	0.0	0.6	0.9	0.0	0.0	0.0	118.32	0.0	0.0	118.7	1158
Phase5	Trenchers	7	8	Trenchers	75	78	0.50 Diesel	Trenchers75	0.4	13.2	17.8	0.5	0.5	0.0	0.1	1.7	2.3	0.1	0.1	0.0	301.50	0.0	0.0	302.5	2953
Phase5	Pumps	5	8	Pumps	25	84	0.74 Diesel	Pumps25	0.5	15.1	22.5	0.1	0.1	0.0	0.1	2.0	2.9	0.0	0.0	0.0	368.80	0.0		370.1	3612
Phase6	Aerial Lifts	4	8	Aerial Lifts	75	63	0.31 Diesel	Aerial Lifts75	0.1	3.8	5.1	0.2	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	21.45	0.0	0.0	21.5	210
Phase6	Cranes	3	8	Cranes	175	231	0.29 Diesel	Cranes175	0.3	8.2	9.2	0.3	0.3	0.0	0.0	0.3	0.3	0.0	0.0	0.0	55.13	0.0	0.0	55.3	540
Phase6	Forklifts	3	8	Forklifts	100	89	0.20 Diesel	Forklifts100	0.1	2.2	3.5	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	14.65	0.0	0.0	14.7	143
Phase6	Carts/ATVs	3	8	Other General Industrial Equipment	100	88	0.34 Diesel	Other General Industrial Equipment100	0.1	3./	5.9	0.2	0.2	0.0	0.0	0.1	0.2	0.0	0.0	0.0	24.66	0.0	0.0	24.7	241
Phase6	Tractors/Loaders/Backhoes	7	8	Tractors/Loaders/Backhoes	100	97	0.37 Diesel	Tractors/Loaders/Backhoes100	0.4	10.3	16.4	0.5	0.4	0.0	0.0	0.3	0.5	0.0	0.0	0.0	68.75	0.0	0.0	69.0	673
Phase6	Trenchers	/	8	Trenchers	75 75	78	0.50 Diesel	Trenchers75	0.4	13.2	17.8	0.5	0.5	0.0	0.0	0.4	0.6	0.0	0.0	0.0	75.09	0.0	0.0	75.3	735
Phase7	Aerial Lifts	4	8	Aerial Lifts	75 175	63	0.31 Diesel	Aerial Lifts75	0.1	3.8	5.1	0.2	0.1	0.0	0.0	0.2	0.2	0.0	0.0	0.0	28.38 97.26	0.0	0.0	28.5	277
Phase7	Cranes Crawler Tractors	4	8	Crawler Tractors	175 175	231	0.29 Diesel	Crawler Tractors 175	0.4	11.0	12.3	0.4	0.4	0.0	0.0	0.5	0.5	0.0	0.0	0.0	97.26	0.0	0.0	97.6	952
Phase7 Phase7	Forklifts	3	8	Crawler Tractors Forklifts	175 100	212 89	0.43 Diesel 0.20 Diesel	Crawler Tractors175 Forklifts100	0.4 0.1	11.2 2.2	12.5 3.5	0.4 0.1	0.4	0.0	0.0 0.0	0.5 0.1	0.5 0.1	0.0 0.0	0.0 0.0	0.0 0.0	19.38	0.0 0.0	0.0 0.0	99.6 19.4	972
Phase7	Generator Sets	2	o Q	Generator Sets	75	84	0.74 Diesel	Generator Sets75	0.1	9.0	3.3 12.2	0.0	0.1 0.0	0.0 0.0	0.0	0.1	0.5	0.0	0.0	0.0	72.92	0.0	0.0	73.2	189 714
Phase7	Carts/ATVs	3	δ 8	Other General Industrial Equipment	100	88	0.34 Diesel	Other General Industrial Equipment100	0.3	3.7	5.9	0.0	0.0	0.0	0.0	0.4	0.3	0.0	0.0	0.0	32.63	0.0	0.0	32.7	319
Phase7	Tractors/Loaders/Backhoes	<i>J</i>	δ 8	Tractors/Loaders/Backhoes	100	97	0.37 Diesel	Tractors/Loaders/Backhoes100	0.1	5.9	9.4	0.2	0.2	0.0	0.0	0.2	0.3	0.0	0.0	0.0	51.98	0.0	0.0	52.7	509
nasc7	Tractors/ Loaders/ Backrocs	-	0	Tractors/ Loaders/ Backhoes	100	37	0.57 Diesei		0.2	J.J	J.4	0.5	0.5	0.0	0.0	0.5	0.4	0.0	0.0	0.0	1 31.30	0.0	0.0	JZ.Z	1 303
											Pounds	per dav					Tons p	er year			M	letric ton	s per yea	ır	Gal p
								Phase	ROG	NOX		PM10		1 SO2	ROG	NOX	со	PM10	PM2.5	SO2	CO2	CH4		CO2e	yea
								Phase1	3.9	103.6			3.2	0.2	0.0	1.1	1.4	0.0	0.0	0.0	218.1	0.0		218.9	2136
								Phase2	4.3	111.2		4.5	4.0	0.2	0.2	4.9	6.0	0.2	0.2	0.0	999.7	0.0		1003.1	9792
								Phase3 Phase4	3.3 1.1	85.2 28.0	99.2 37.2	3.3 1.2	3.0 1.1	0.2	0.1	1.9 0.6	2.2 0.8	0.1 0.0	0.1 0.0	0.0	390.3 125.7	0.0 0.0	0.0	391.7 126.1	3823 1230
								Phase4 Phase5	4.5	28.0 134.0		3.4	1.1 3.1	0.1	0.0 0.6	17.5	0.8 24.7	0.0	0.0	0.0 0.0	3258.4	0.0	0.0 0.0	3269.6	3191
								Phase6	1.5	41.3	57.9	1.8	1.6	0.1	0.0	1.3	1.9	0.1	0.4	0.0	259.7	0.0	0.0	260.6	2543
								Phase7		46.7	60.8	1.6	1.4	0.1	0.1	2.0	2.6	0.1	0.1	0.0	401.8	0.0	0.0	403.2	3935
								1110367	1.7	40.7	00.8	1.0	1.4	0.1	0.1	2.0	2.0	0.1	0.1	0.0	401.0	0.0	0.0		. 555.

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Bullhead Solar Project

Employee Commute Trips - Mitigated and Controlled Fugitive Dust

																		202	4									
								STREX and HTSK	13	14	15	16	18	17	19	20									21	22 23		
								RUNEX, PMBW, PMTW, (2	3	4	5	7	6	8	9									10	11 12		
	Vahialaa/	C: l -		N4:100/d								Pound	s per day							Tons	s per year				Met	ric tons pe	r year	
Code	Vehicles/ day	Single Trips/day	Speed (mph)	Miles/d ay	Vehicle	Vehicle Type	Fuel	Concat	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5	SO2	CO2	CH4 N2O	CO2e	Gal per ye
Phase5	302	604		15402	Employee	LDA-LDTOffsite	Gas	LDA-LDTOffsite	3.8	2.5	33.4	0.05	0.0	6.1	1.0	0.1	0.5	0.3	4.4	0.0	0.0	0.8	0.1	0.0	1.205.4	0.0 0.0		
Phase5	302	604	10	604	Onsite Employee	LDA-LDTOnsite	Gas	LDA-LDTOnsite10	3.4	0.4	5.6	0.01	0.0	117.9			0.4	0.1	0.7	0.0	0.0	15.4	1.5	0.0		0.0 0.0		5306
	1 vehicle per wo	rker						<u>-</u>																				•
												Pound	s per day							Tons	s per year				Met	ric tons per	year	
								Phase	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 [SO2	CO2	CH4 N2O	CO2e	Gal per ye
								Phase1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0	0.0	0.0
								Phase2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0	0.0	0.0
								Phase3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0	0.0	0.0
								Phase4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0	0.0	0.0
								Phase5	7.2	2.9	39.0	0.1	0.0	123.9	12.8	0.1	0.9	0.4	5.1	0.0	0.0	16.2	1.7	0.0	1,252.0	0.0 0.0	1,263.3	142595.5
								Phase6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0	0.0	0.0
								Phase7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0	0.0	0.0

Appendix B: Air Quality and Greenhouse Gas Mass Emission Modeling

Vendor and Water Truck Trips - Mitigated and Controlled Fugitive Dust

New 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0																			2	2024										
Single Markeflow Migrigary Migrigary Markeflow Migrigary Migriga									STREX and HTSK	13	14	15	16	18	17	19	20									21	22	23		
Value Valu				mph	5				RUNEX, PMBW, PMTW, and N	/ 2	3	4	5	7	6	8	9													_
Name Na	ode	Vehicles/ day Tr	Single ips/day	Hrs/Veh/Day	Speed (mp	oh) Miles/da	y Vehicle	Vehicle Type	Fuel Lookup	ROG	NOX	со			•	PM2.5 D	SO2	ROG	NOX	СО				PM2.5 D	SO2					Gal per
Name	/ater Trucks																													T can per y
Name	hase1	0	0			0	Offsite Water Truck	T6offsite	Diesel T6offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
See Control	nase2	0	0			0	Offsite Water Truck	T6offsite	Diesel T6offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
Seed Column Col	nase3	0	0			0	Offsite Water Truck	T6offsite	Diesel T6offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
12 24		0	0			0	Offsite Water Truck			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
hase6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		12	24			24	Offsite Water Truck			0.0	0.7	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	21	0.0	0.0	22	2034
hase? 0 0 0		0	0			0	Offsite Water Truck	T6offsite	Diesel T6offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
See 2 0 0 2 5 0 Onsite Water Truck T6Onsite Diesel T6Onsite Dies		0	0			0				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
See Fig. F	ase1	0	0	2	5	0	Onsite Water Truck	T6Onsite	Diesel T6Onsite5Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
ase4 0 0 0 2 5 0 Onsite Water Truck T6Onsite Diesel T6OnsiteSindustrial 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	ase2	0	0	2	5	0	Onsite Water Truck	T6Onsite	Diesel T6Onsite5Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
hases 12 12 12 2 5 120 Onsite Water Truck T6Onsite Diesel T6OnsiteSindustrial 0.0 1.4 0.4 0.002 0.002 23.4 6.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	hase3	0	0	2	5	0	Onsite Water Truck	T6Onsite	Diesel T6Onsite5Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
Tasse6 0 0 0 2 5 0 0 Onsite Water Truck T6Onsite Diese T7Onsite Di	nase4	0	0	2	5	0	Onsite Water Truck	T6Onsite	Diesel T6Onsite5Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
Assert O O O O O O O O O	nase5	12	12	2	5	120	Onsite Water Truck	T6Onsite	Diesel T6Onsite5Industrial	0.0	1.4	0.4	0.002	0.002	23.4	6.7	0.0	0.0	0.2	0.0	0.0	0.0	3.1	0.9	0.0	83	0.0	0.0	87	8119
Phase 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	nase6	0	0	2	5	0	Onsite Water Truck	T6Onsite	Diesel T6Onsite5Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
155 310 - 10 78 Onsite Vendor Truck Tronsite Diesel D		O	0	2	5	0	Onsite Water Truck	T6Onsite	Diesel T6Onsite5Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
Phase ROG NOX CO PM10 PM2.5 PM10 PM				-		17050		T7offsite	Diesel T7offsite	1.9	69.0						0.6		9.0	2.7		0.1			0.1		0.0	1.2	7,887	7377
Phase ROG NOX CO PM10 PM2.5 PM10 D PM2.5 D SO2 ROG NOX CO PM10 D PM2.5 D SO2 CO2 CH4 N2O CO2e Gal property Phase1 0.0	ase5	155	310	-	10	78	Onsite Vendor Truck	T7Onsite	Diesel T7Onsite10	1.3	18.5	18.5	0.02	0.0	15.1	1.5	0.0	0.2	2.4	2.4	0.0	0.0	2.0	0.2	0.0	436	0.0	0.1	456	4267
Phase1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.																														
Phase2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0																		1												Gal per y
Phase3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.																										ı ~			0	0
Phase4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.																										_			0	0
Phase5 3.2 89.6 40.2 0.80 0.8 48.9 10.5 0.6 0.4 11.7 5.2 0.1 0.1 6.4 1.4 0.1 8,072 0.0 1.3 8,452 790 Phase6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.																													0	0
																													8,452	790,6
Phase7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.										0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0						0	0
									Phase7	0.0	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
																										1				

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Earthmoving and Paving - Mitigated and Controlled Fugitive Dust

															202	.4									
		Grading/Strip	Borrow/Excavate	Dozina					Pounds	per day							Tor	ns per ye	ar			r	Metric to	ns per y	ear
Code	Air Basin	(acres/day)	(cy/day)	Dozing hr/day	Paving (sf/day)	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	со	PM1	0 PM2.	5 PM10	D PM2.5 D	SO2	CO2	CH4	N2O	CO2e
Phase1	MDAB	0.0	0	24	0	0.0					7.0	3.9		0.0					0.1	0.0					
Phase2	MDAB	7.6	0	48	0	0.0					17.2	8.1		0.0					0.8	0.4					
Phase3	MDAB	0.0	0	32	0	0.0					9.4	5.2		0.0					0.2	0.1					
Phase	Activity	Total	Unit	Total days	Unit/Day																				
Phase2	Grading	665	acres	88	7.6																				
Phase	Activity	Number of Pieces	Total Hours/Day																						
Phase1	Dozing	3	24																						
Phase2	Dozing	6	48																						
Phase3	Dozing	4	32																						

Phase1 0.0 0.0 0.0 0.0 0.0 7.0 3.9 0.0<					Pounds	per day							Tons	per year				N	letric to	ns per ye	ar
Phase2 0.0 0.0 0.0 0.0 17.2 8.1 0.0 <	Phase	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4	N2O	CO2e
Phase3 0.0 0.0 0.0 0.0 9.4 5.2 0.0 <t< td=""><td>Phase1</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>7.0</td><td>3.9</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.1</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td></t<>	Phase1	0.0	0.0	0.0	0.0	0.0	7.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Phase4 0.0 <t< td=""><td>Phase2</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>17.2</td><td>8.1</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.8</td><td>0.4</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td></t<>	Phase2	0.0	0.0	0.0	0.0	0.0	17.2	8.1	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.4	0.0	0.0	0.0	0.0	0.0
Phase5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Phase3	0.0	0.0	0.0	0.0	0.0	9.4	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0
	Phase4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Phase5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Phase6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Phase7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Demolition - Mitigated and Controlled Fugitive Dust

													202	4									
0.1	4: p :	<u> </u>	6.71				Pounds	per day							Tons	per year	•			N	/letric tor	s per ye	ar
Code	Air Basin	Structures	Sq/day	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4	N2O	CO2
Phase2	MDAB	N/A	80						0.0	0.0							0.0	0.0					
							Pounds	per day							Tons	per year				N	/letric tor	ıs per ye	ar
			Phase	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	со	PM10			PM2.5 D	SO2	CO2	CH4	N2O	CO2e
			Phase1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			Phase2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			Phase3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			Phase4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			Phase5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			Phase6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			Phase7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Water-Related Energy

														024										<u> </u>
		Total Electricity Demand	Total Electricity Demand				Pounds	per day							Tons p	er year				M	letric tor	ns per ye	ar	
Code	Air Basin	(MWh)	per day (MWh)	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4	N2O	CO2e	kWh p year
Phase5	MDAB	724	2.8																	168	0.0	0.0	168	72404
							Dougle	man day							Tons n						lotric to			
							Pounus	per day							rons p	er year				IV	etric tor	ns per ye	<u>ar</u>	kWh p
			Phase	ROG	NOX	CO	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4	N2O	CO2e	year
Total Water Demand (ac-ft)	200	water now coming from	Phase1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gallons	65,170,200	on-site wells	Phase2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MG	65		Phase3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
kWh	724041		Phase4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MWh	724		Phase5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	168.2	0.0	0.0	168.2	724040
		•	Phase6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			Phase7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Loss of Carbon from Tree Removal

Rates per CUFR

CO2 Sequ	estration	Total CO2 St	ored
lb/tree/year	MT/tree/year	lb/tree	MT/tre
11.9	0.005	223.8	0.102

Totals for Bullhead

	CO2 Seques	Total CO2	Stored	
lb/year	MT/year	MT over life (30 years)	lb stored	MT stored
27,370	12	372.44	514,740	233

Total	606
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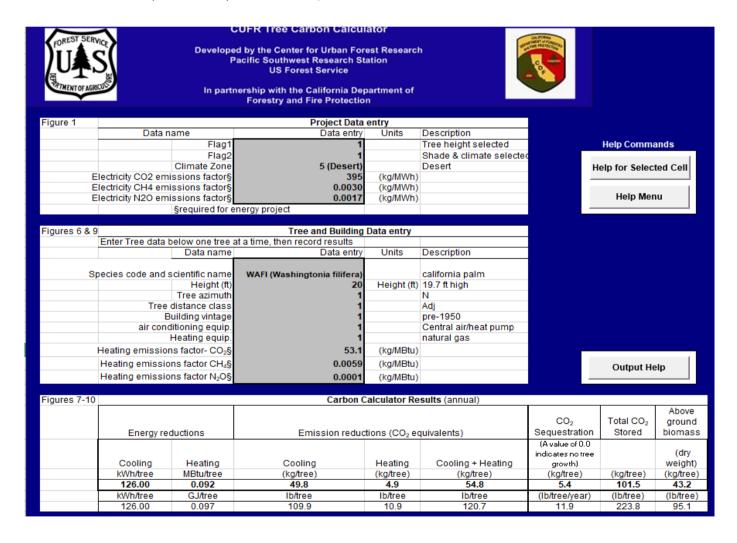
Assumptions:

- 1 Proposed project would remove approximately 1,050 Joshua Trees during site prep. To be conservative, it was assumed that all removed trees would be mulched.
- 2 The CUFR Tree Carbon Calculator does not include Joshua Trees (Yucca brevifolia). Per the Help guide, if the desired species is not included in the list, the user should input a species from the same climate zone with the most similar growth rate and mature size. With this in mind, Climate Zone 5 (Desert) was chosen, and Washingtonia filifera (California palm) was chosen. (https://www.fs.usda.gov/ccrc/tools/tree-carbon-calculator-ctcc)
- 3 Joshua Trees average 20-70 ft tall, although trees exceeding 40 ft are rare. (https://www.fs.fed.us/database/feis/plants/tree/yucbre/all.html).

1 lb = 0.000453592 MT

Total Trees= 2300 Provided by the Applicant

Tree Calculator Screenshot:



Assumptions

General Assumptions

0.002204623 Standard lbs/gram mt/gram 0.000001 Standard 0.000453592 Standard mt/lbs ton/lbs 0.0005 Standard 3.26E+05 Standard Gallons per acre-foot ton per cy conversion 1.2641662 CalEEMod ton per SF conversion 0.046 CalEEMod acre per SF conversion 2.30E-05 Standard

lbs CO2 per gallon of diesel22.5Climate Registry 2018lbs CO2 per gallon of gas19.4Climate Registry 2018MW/KW0.001

 MW/KW
 0.001

 CH4 GWP
 25 AR4

 N2O GWP
 298 AR4

CO2e lb/MWh 512 SCE 2020 EF https://www.edison.com/home/sustainability-report.html

CH4 lb/MWh

0 SCE rate is CO2e - CH4 already included
N2O lb/MWh

0 SCE rate is CO2e - N2O already included

Single trips per vehicle 2 STREX, HTSK, RUNLS calculations for routine vehicles assume 2 single trips per vehicle/day

Employee commute distance (paved)

25.5 miles/trip

Travel distance provided in TIS from 9/15/2021: 26.5 miles. 25.5 assumed to be paved, 1 miles unpaved.

Average onsite water truck speed on-site (for estimating VMT based on hours)

Vendor trip distance MDAB (paved)

55 miles

Average trip length for trucks delivering materials, and equipment from local and non-local sources from EDF data response.

Construction Water Truck Trip (paved)

Water will be sourced by on-site wells.

Total Demolition 7,079 sf
Annual Processing Rate Concrete 0 CY
Distance Unpayed onsite - Water truck 1 00 miles

Distance Unpaved onsite - Water truck

Distance Unpaved onsite - Vendor Truck

0.25 miles

Offroad Equipment Match

Eqpt Description (Valentine) CalEEMod Equipment Name

Aerial Lifts Aerial Lifts
Air Compressors Air Compressors

Carts/ATVs Other General Industrial Equipment

Cranes Crawler Tractors Crawler Tractors
Forklifts Forklifts
Generator Sets
Graders Graders

Off-Highway Trucks Off-Highway Trucks

Other Construction Equipment
Other Equipment
Other Construction Equipment
Other Construction Equipment

Post Drivers Skid Steer Loaders

Pumps Pumps Rollers Rollers

Rubber Tired Dozers

Scrapers

Skid Steers

Skid Steer Loaders

Skid Steer Loaders

Tractors/Loaders/Backhoes

Rubber Tired Dozers

Scrapers

Skid Steer Loaders

Skid Steer Loaders

Tractors/Loaders/Backhoes

Trenchers Trenchers Welders Welders

Vehicle Match

<u>Onsite</u>

Onsite Water Truck T6Onsite
Onsite Vendor Truck T7Onsite
Onsite Employee LDA-LDTOnsite

Offsite Vehicles

Offsite Vendor Truck T7offsite
Employee LDA-LDTOffsite
Offsite Water Truck T6offsite

Construction Schedule

Phase	Code	Start Date	End Date	Working Days	Days/Week	2024	
Move On	Phase1	1/1/2024	1/30/2024	21	5	21	
Site Preparation & Grading	Phase2	1/1/2024	5/1/2024	88	5	88	
New Access Road Construction	Phase3	1/1/2024	3/1/2024	45	5	45	
Internal Roads Construction	Phase4	1/1/2024	3/1/2024	45	5	45	
Solar Array Structural, Underground & Panel Installation, Battery Storage	Phase5	1/1/2024	12/31/2024	261	5	261	
Electrical Substation & Microwave Tower Construction	Phase6	1/1/2024	4/1/2024	65	5	65	
Generation Tie Line Construction	Phase7	1/1/2024	4/30/2024	86	5	86	

Source: CalEEMod version 2022, Appendix G - Table G-11 (Tier 3 and Tier 4 Final Generators)

Aerial Lifts Air Compressors Bir Compressors Bore/Drill Rigs B	2024 2024 2024 2024 2024 2024 2024 2024	2024Aerial Lifts25 2024Aerial Lifts50 2024Aerial Lifts50 2024Aerial Lifts50 2024Aerial Lifts75 2024Aerial Lifts175 2024Aerial Lifts175 2024Aerial Lifts300 2024Air Compressors0 2024Air Compressors25 2024Bore/Drill Rigs0 2024Bore/Drill Rigs50 2024Bore/Drill Rigs50 2024Bore/Drill Rigs50 2024Bore/Drill Rigs50 2024Bore/Drill Rigs100 2024Bore/Drill Rigs100 2024Bore/Drill Rigs300 2024Bore/Drill Rigs300 2024Bore/Drill Rigs300 2024Bore/Drill Rigs550 2024Cement and Mortar Mixers0 2024Cement and Mortar Mixers0 2024Concrete/Industrial Saws0 2024Concrete/Industrial Saws0 2024Cranes50 2024Cranes75 2024Cranes50 2024Cranes75 2024Cranes100 2024Cranes75 2024Cranes300 2024Cranes750 2024Cranes750 2024Cranes750 2024Cranes750 2024Crawler Tractors50 2024Exawators75 2024Excavators50 2024Excavators50 2024Excavators50 2024Excavators75 2024Excavators50	0 25 50 75 100 175 300 0 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 0 25 50 75 100 175 300 600 750 75 100 175 300 600 750 75 100 175 300 600 750 750 750 750 750 750 750 750 750 7	0.838 0.220 0.090 0.090 0.090 0.090 0.090 0.591 0.220 0.843 0.220 0.090 0.090 0.090 0.090 0.090 0.090 0.554 0.593 0.220 1.235 0.220 0.090	6.398 4.630 2.740 2.320 2.320 2.320 4.417 4.630 6.437 4.630 2.740 2.320 2.320 2.320 2.320 2.320 4.202 4.531 4.630 2.740 2.740 2.320	4.045 4.100 3.700 3.700 2.600 2.600 2.622 4.100 3.804 4.100 3.700 2.600 2.600 2.600 2.600 2.600 2.600 3.257 2.447 4.100 5.722 4.100 3.700 3.700 3.700 3.700 2.600	0.248 0.280 0.190 0.110 0.110 0.090 0.090 0.183 0.280 0.242 0.280 0.190 0.110 0.090 0.090 0.090 0.090 0.164 0.169 0.280 0.382 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.110 0.110 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.190 0.110 0.110 0.090 0.090 0.090 0.190 0.110 0.110 0.110 0.090 0.090 0.090 0.190 0.110 0.110 0.110 0.110 0.090	0.228 0.260 0.180 0.100 0.100 0.080 0.080 0.169 0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.080 0.151 0.156 0.260 0.151 0.156 0.260 0.180 0.100 0.100 0.080 0.100 0.100 0.080 0.100 0.100 0.080	0.012 0.005 0.005 0.005 0.005 0.005 0.005 0.007 0.011 0.006 0.005	848.447 586.903 527.849 527.988 527.719 527.713 527.713 569.937 568.361 851.027 598.652 518.484 521.434 532.059 524.922 522.319 532.561 526.939 570.167 594.363 574.905 586.607 592.536 531.141 526.264 528.401 527.567 527.532 527.321 527.566 583.519 527.171 528.713 527.566 583.519 527.171 528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317 527.683	0.034 0.024 0.021 0.021 0.021 0.021 0.023 0.023 0.035 0.024 0.021 0.021 0.022 0.021 0.022 0.021 0.023 0.024 0.023 0.024 0.023 0.024 0.023 0.024 0.021	0.007 0.005 0.004 0.004 0.004 0.005 0.005 0.005 0.007 0.005 0.004 0.004 0.004 0.004 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.004
Acrial Lifts Acria	2024 2024 2024 2024 2024 2024 2024 2024	2024Aerial Lifts75 2024Aerial Lifts75 2024Aerial Lifts100 2024Aerial Lifts175 2024Aerial Lifts300 2024Air Compressors0 2024Air Compressors0 2024Bore/Drill Rigs0 2024Bore/Drill Rigs50 2024Bore/Drill Rigs50 2024Bore/Drill Rigs100 2024Bore/Drill Rigs100 2024Bore/Drill Rigs175 2024Bore/Drill Rigs300 2024Bore/Drill Rigs300 2024Bore/Drill Rigs75 2024Bore/Drill Rigs75 2024Bore/Drill Rigs750 2024Comcrete/Industrial Saws0 2024Concrete/Industrial Saws0 2024Concrete/Industrial Saws0 2024Cranes0 2024Cranes50 2024Cranes55 2024Cranes100 2024Cranes175 2024Cranes100 2024Cranes75 2024Cranes600 2024Cranes750 2024Cranes750 2024Cranes750 2024Cranes750 2024Cranes750 2024Cranes750 2024Cranes750 2024Cranes750 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors100 2024Crawler Tractors100 2024Crawler Tractors100 2024Crawler Tractors100 2024Crawler Tractors100 2024Crawler Tractors50 2024Excavators50	50 75 100 175 300 0 25 0 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 0 25 50 75 100 175 300 600 750 75 100 175 300 600 750 750 750 750 750 750 750 750 750 7	0.090 0.090 0.090 0.090 0.591 0.220 0.843 0.220 0.090 0.090 0.090 0.090 0.090 0.554 0.593 0.220 1.235 0.220 0.090	2.740 2.740 2.320 2.320 4.417 4.630 6.437 4.630 2.740 2.320 2.320 2.320 2.320 4.202 4.531 4.630 2.740 2.740 2.320	3.700 3.700 2.600 2.600 2.622 4.100 3.804 4.100 3.700 2.600 2.600 2.600 2.600 2.600 3.257 2.447 4.100 5.722 4.100 3.700 3.700 3.700 3.700 2.600	0.190 0.110 0.110 0.090 0.090 0.183 0.280 0.242 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.164 0.169 0.280 0.382 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.110 0.110 0.110 0.090 0.090 0.090 0.090 0.110 0.110 0.110 0.110 0.090 0.090 0.280 0.190 0.110 0.110 0.110 0.110 0.110 0.090 0.090 0.280 0.190 0.110 0.110 0.110 0.110 0.110 0.090	0.180 0.100 0.100 0.100 0.080 0.080 0.169 0.260 0.223 0.260 0.180 0.100 0.080 0.080 0.080 0.151 0.156 0.260 0.351 0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.100	0.005 0.005 0.005 0.005 0.005 0.008 0.007 0.011 0.006 0.005	527.849 527.988 527.719 527.713 527.713 569.937 568.361 851.027 598.652 518.484 521.434 532.059 524.922 522.319 532.561 526.939 570.167 594.363 574.905 586.607 592.536 531.141 526.264 528.401 527.567 527.532 527.321 527.566 583.519 527.171 528.713 527.566 583.519 527.171 528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.021 0.021 0.021 0.021 0.023 0.023 0.024 0.021 0.021 0.022 0.021 0.022 0.021 0.023 0.024 0.023 0.024 0.023 0.024 0.023 0.024 0.021	0.004 0.004 0.004 0.004 0.005 0.005 0.005 0.004 0.004 0.004 0.004 0.004 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.004 0.005 0.005 0.005 0.006
erial Lifts erial	2024 2024 2024 2024 2024 2024 2024 2024	2024Aerial Lifts175 2024Aerial Lifts175 2024Aerial Lifts300 2024Air Compressors0 2024Air Compressors25 2024Bore/Drill Rigs0 2024Bore/Drill Rigs50 2024Bore/Drill Rigs50 2024Bore/Drill Rigs75 2024Bore/Drill Rigs100 2024Bore/Drill Rigs100 2024Bore/Drill Rigs300 2024Bore/Drill Rigs300 2024Bore/Drill Rigs550 2024Bore/Drill Rigs75 2024Bore/Drill Rigs75 2024Bore/Drill Rigs750 2024Comprete/Indistrial Saws0 2024Concrete/Industrial Saws0 2024Concrete/Industrial Saws0 2024Concrete/Industrial Saws0 2024Cranes0 2024Cranes50 2024Cranes75 2024Cranes75 2024Cranes100 2024Cranes75 2024Cranes600 2024Cranes750 2024Cranes750 2024Cranes750 2024Cranes750 2024Crawler Tractors25 2024Crawler Tractors50 2024Crawler Tractors100 2024Crawler Tractors100 2024Crawler Tractors175 2024Crawler Tractors175 2024Crawler Tractors50 2024Exawler Tractors50 2024Excavators0 2024Excavators0 2024Excavators50 2024Excavators50 2024Excavators50 2024Excavators50 2024Excavators50 2024Excavators600 2024Excavators750	100 175 300 0 25 0 25 50 75 100 175 300 600 750 0 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 600 750 75 100 175 300 600 750 600 750 75 100 175 300 600 750 75 100 175 300 600 750 750 750 750 750 750 750 750 750 7	0.090 0.090 0.090 0.591 0.220 0.843 0.220 0.090 0.090 0.090 0.090 0.090 0.554 0.593 0.220 1.235 0.220 0.090	2.320 2.320 4.417 4.630 6.437 4.630 2.740 2.740 2.320 2.320 2.320 2.320 4.202 4.531 4.630 4.864 4.630 2.740 2.320	3.700 2.600 2.622 4.100 3.804 4.100 3.700 3.700 2.600 2.600 2.600 2.600 3.257 2.447 4.100 5.722 4.100 3.700 3.700 3.700 2.600	0.110 0.090 0.090 0.183 0.280 0.242 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.382 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.110 0.110 0.110 0.090 0.090 0.090 0.090 0.110 0.110 0.110 0.110 0.110 0.110 0.110 0.110 0.110 0.110 0.090 0.090 0.280 0.190 0.110 0.110 0.110 0.110 0.110 0.110 0.090 0.090 0.280 0.190 0.110 0.110 0.110 0.110 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090	0.100 0.080 0.080 0.169 0.260 0.223 0.260 0.180 0.100 0.080 0.080 0.080 0.051 0.156 0.260 0.151 0.156 0.260 0.351 0.260 0.180 0.100 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.260 0.180 0.100	0.005 0.005 0.005 0.007 0.011 0.006 0.005	527.719 527.713 527.713 569.937 568.361 851.027 598.652 518.484 521.434 532.059 524.922 522.319 532.561 526.939 570.167 594.363 574.905 586.607 592.536 531.141 526.264 528.401 527.567 527.532 527.321 527.566 583.519 527.171 528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.021 0.021 0.023 0.023 0.023 0.024 0.021 0.021 0.022 0.021 0.022 0.021 0.023 0.024 0.023 0.024 0.023 0.024 0.021	0.004 0.004 0.005 0.005 0.005 0.007 0.005 0.004 0.004 0.004 0.004 0.005 0.005 0.005 0.005 0.005 0.005 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.005
serial Lifts serial Lifts serial Lifts serial Lifts sir Compressors ore/Drill Rigs ore-Drill Rig	2024 2024 2024 2024 2024 2024 2024 2024	2024Aerial Lifts175 2024Aerial Lifts300 2024Air Compressors0 2024Air Compressors25 2024Bore/Drill Rigs0 2024Bore/Drill Rigs50 2024Bore/Drill Rigs50 2024Bore/Drill Rigs50 2024Bore/Drill Rigs75 2024Bore/Drill Rigs100 2024Bore/Drill Rigs175 2024Bore/Drill Rigs300 2024Bore/Drill Rigs300 2024Bore/Drill Rigs750 2024Bore/Drill Rigs750 2024Cement and Mortar Mixers0 2024Concrete/Industrial Saws0 2024Concrete/Industrial Saws25 2024Cranes0 2024Cranes50 2024Cranes50 2024Cranes75 2024Cranes100 2024Cranes175 2024Cranes100 2024Cranes750 2024Cranes750 2024Cranes750 2024Cranes750 2024Cranes750 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors100 2024Crawler Tractors175 2024Crawler Tractors100 2024Crawler Tractors175 2024Crawler Tractors175 2024Crawler Tractors175 2024Crawler Tractors50 2024Crawler Tractors175 2024Crawler Tractors50 2024Excavators50	175 300 0 25 0 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 750 750 750 750 750 750 750 750 7	0.090 0.090 0.591 0.220 0.843 0.220 0.090 0.090 0.090 0.090 0.090 0.554 0.593 0.220 1.235 0.220 0.090	2.320 2.320 4.417 4.630 6.437 4.630 2.740 2.740 2.320 2.320 2.320 2.320 4.202 4.531 4.630 4.864 4.630 2.740 2.740 2.320	2.600 2.600 2.622 4.100 3.804 4.100 3.700 3.700 2.600 2.600 2.600 2.600 3.257 2.447 4.100 5.722 4.100 3.700 3.700 2.600	0.090 0.090 0.183 0.280 0.242 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.164 0.169 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.090 0.090 0.090 0.110 0.110 0.110 0.090 0.090 0.090 0.110 0.110 0.110 0.110 0.090 0.090 0.110 0.110 0.110 0.110 0.110 0.110 0.090 0.280 0.190 0.110 0.110 0.110 0.110 0.090 0.280 0.190 0.110 0.110 0.110 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090	0.080 0.080 0.169 0.260 0.223 0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.151 0.156 0.260 0.351 0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.260 0.180 0.100	0.005 0.008 0.007 0.011 0.006 0.005	527.713 527.713 569.937 568.361 851.027 598.652 518.484 521.434 532.059 524.922 522.319 532.561 526.939 570.167 594.363 574.905 586.607 592.536 531.141 526.264 528.401 527.567 527.532 527.321 527.566 583.519 527.171 528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.021 0.023 0.023 0.023 0.024 0.021 0.021 0.022 0.021 0.022 0.021 0.023 0.024 0.023 0.024 0.023 0.024 0.021	0.004 0.005 0.005 0.007 0.005 0.004 0.004 0.004 0.004 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.005 0.005 0.005 0.005 0.005 0.006 0.006 0.006 0.007 0.005 0.007
rerial Lifts ir Compressors ir Compressors ore/Drill Rigs ore-Drill Rigs ore-Dril	2024 2024 2024 2024 2024 2024 2024 2024	2024Aerial Lifts300 2024Air Compressors0 2024Air Compressors25 2024Bore/Drill Rigs0 2024Bore/Drill Rigs50 2024Bore/Drill Rigs50 2024Bore/Drill Rigs50 2024Bore/Drill Rigs75 2024Bore/Drill Rigs100 2024Bore/Drill Rigs175 2024Bore/Drill Rigs300 2024Bore/Drill Rigs300 2024Bore/Drill Rigs750 2024Bore/Drill Rigs750 2024Cement and Mortar Mixers0 2024Concrete/Industrial Saws0 2024Concrete/Industrial Saws25 2024Cranes50 2024Cranes50 2024Cranes75 2024Cranes100 2024Cranes175 2024Cranes100 2024Cranes750 2024Cranes750 2024Cranes750 2024Cranes750 2024Cranes750 2024Cranes750 2024Cranes750 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors100 2024Crawler Tractors175 2024Crawler Tractors175 2024Crawler Tractors175 2024Crawler Tractors175 2024Crawler Tractors50 2024Excavators50	300 0 25 0 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 750 750 750 750 750 750 750 750 7	0.090 0.591 0.220 0.843 0.220 0.090 0.090 0.090 0.090 0.090 0.554 0.593 0.220 1.235 0.220 0.090	2.320 4.417 4.630 6.437 4.630 2.740 2.320 2.320 2.320 2.320 4.202 4.531 4.630 4.864 4.630 2.740 2.320	2.600 2.622 4.100 3.804 4.100 3.700 3.700 2.600 2.600 2.600 2.600 3.257 2.447 4.100 5.722 4.100 3.700 3.700 2.600	0.090 0.183 0.280 0.242 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.164 0.169 0.280 0.382 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.090 0.090 0.110 0.110 0.110 0.090 0.090 0.110 0.110 0.110 0.110 0.090 0.090 0.110 0.110 0.110 0.110 0.090 0.280 0.190 0.110 0.110 0.110 0.090 0.110 0.110 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090	0.080 0.169 0.260 0.223 0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.151 0.156 0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.100	0.005 0.008 0.007 0.011 0.006 0.005	527.713 569.937 568.361 851.027 598.652 518.484 521.434 532.059 524.922 522.319 532.561 526.939 570.167 594.363 574.905 586.607 592.536 531.141 526.264 528.401 527.567 527.532 527.321 527.566 583.519 527.171 528.713 527.566 583.519 527.475 527.935 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.021 0.023 0.023 0.035 0.024 0.021 0.021 0.022 0.021 0.022 0.021 0.023 0.024 0.023 0.024 0.022 0.021	0.004 0.005 0.007 0.005 0.004 0.004 0.004 0.004 0.005 0.005 0.005 0.005 0.005 0.005 0.004
sir Compressors sore/Drill Rigs sore/Drill Rig	2024 2024 2024 2024 2024 2024 2024 2024	2024Air Compressors25 2024Bore/Drill Rigs0 2024Bore/Drill Rigs50 2024Bore/Drill Rigs50 2024Bore/Drill Rigs50 2024Bore/Drill Rigs75 2024Bore/Drill Rigs100 2024Bore/Drill Rigs175 2024Bore/Drill Rigs300 2024Bore/Drill Rigs300 2024Bore/Drill Rigs600 2024Bore/Drill Rigs600 2024Bore/Drill Rigs750 2024Cement and Mortar Mixers0 2024Concrete/Industrial Saws0 2024Concrete/Industrial Saws0 2024Cranes0 2024Cranes50 2024Cranes50 2024Cranes55 2024Cranes100 2024Cranes175 2024Cranes300 2024Cranes600 2024Cranes750 2024Crawler Tractors25 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors175 2024Crawler Tractors175 2024Crawler Tractors175 2024Crawler Tractors50 2024Excavators0 2024Excavators0 2024Excavators50 2024Excavators75 2024Excavators75 2024Excavators75 2024Excavators75 2024Excavators750 2024Excavators750	0 25 0 25 50 75 100 175 300 600 750 0 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 0 25 50 75 100 175 300 600 750 750 600 750 600 750 600 750 750 750 750 750 750 750 750 750 7	0.591 0.220 0.843 0.220 0.090 0.090 0.090 0.090 0.090 0.554 0.593 0.220 1.235 0.220 0.090	4.417 4.630 6.437 4.630 2.740 2.740 2.320 2.320 2.320 2.320 4.202 4.531 4.630 2.740 2.740 2.320	2.622 4.100 3.804 4.100 3.700 3.700 3.700 2.600 2.600 2.600 2.600 3.257 2.447 4.100 5.722 4.100 3.700 3.700 2.600	0.183 0.280 0.242 0.280 0.190 0.110 0.090 0.090 0.090 0.164 0.169 0.280 0.382 0.280 0.190 0.110 0.090 0.090 0.090 0.090 0.090 0.090 0.190 0.110 0.110 0.110 0.090 0.090 0.280 0.190 0.110	0.169 0.260 0.223 0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.151 0.156 0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.100	0.008 0.007 0.011 0.006 0.005	569.937 568.361 851.027 598.652 518.484 521.434 532.059 524.922 522.319 532.561 526.939 570.167 594.363 574.905 586.607 592.536 531.141 526.264 528.401 527.567 527.532 527.532 527.321 527.566 583.519 527.171 528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.023 0.023 0.024 0.021 0.021 0.022 0.021 0.023 0.024 0.023 0.024 0.023 0.024 0.022 0.021	0.005 0.005 0.007 0.005 0.004 0.004 0.004 0.004 0.005 0.005 0.005 0.005 0.005 0.004
Bore/Drill Rigs Bore/Drill Rig	2024 2024 2024 2024 2024 2024 2024 2024	2024Bore/Drill Rigs0 2024Bore/Drill Rigs25 2024Bore/Drill Rigs50 2024Bore/Drill Rigs75 2024Bore/Drill Rigs75 2024Bore/Drill Rigs100 2024Bore/Drill Rigs175 2024Bore/Drill Rigs300 2024Bore/Drill Rigs300 2024Bore/Drill Rigs600 2024Bore/Drill Rigs750 2024Cement and Mortar Mixers0 2024Concrete/Industrial Saws0 2024Concrete/Industrial Saws0 2024Cranes0 2024Cranes0 2024Cranes50 2024Cranes50 2024Cranes100 2024Cranes175 2024Cranes300 2024Cranes600 2024Cranes600 2024Crawler Tractors25 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors75 2024Crawler Tractors100 2024Crawler Tractors175 2024Crawler Tractors175 2024Crawler Tractors175 2024Crawler Tractors50 2024Excawler Tractors50	0 25 50 75 100 175 300 600 750 0 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 0 25 50 75 100 175 300 600 750 750 750 750 750 750 750 750 750 7	0.843 0.220 0.090 0.090 0.090 0.090 0.090 0.090 0.554 0.593 0.220 1.235 0.220 0.090	6.437 4.630 2.740 2.320 2.320 2.320 2.320 4.202 4.531 4.630 4.864 4.630 2.740 2.320	3.804 4.100 3.700 3.700 3.700 2.600 2.600 2.600 2.600 3.257 2.447 4.100 5.722 4.100 3.700 3.700 2.600	0.242 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.164 0.169 0.280 0.382 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.090 0.110	0.223 0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.151 0.156 0.260 0.351 0.260 0.180 0.100 0.080 0.080 0.080 0.080 0.080 0.100	0.011 0.006 0.005	851.027 598.652 518.484 521.434 532.059 524.922 522.319 532.561 526.939 570.167 594.363 574.905 586.607 592.536 531.141 526.264 528.401 527.567 527.532 527.532 527.321 527.566 583.519 527.711 528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.035 0.024 0.021 0.021 0.022 0.021 0.022 0.021 0.023 0.024 0.023 0.024 0.022 0.021	0.007 0.005 0.004 0.004 0.004 0.004 0.005 0.005 0.005 0.005 0.005 0.004
sore/Drill Rigs sorement and Mortar Mixers concrete/Industrial Saws concrete/Industrial Saws cranes	2024 2024 2024 2024 2024 2024 2024 2024	2024Bore/Drill Rigs50 2024Bore/Drill Rigs75 2024Bore/Drill Rigs75 2024Bore/Drill Rigs100 2024Bore/Drill Rigs175 2024Bore/Drill Rigs300 2024Bore/Drill Rigs300 2024Bore/Drill Rigs600 2024Bore/Drill Rigs600 2024Bore/Drill Rigs750 2024Cement and Mortar Mixers0 2024Concrete/Industrial Saws0 2024Concrete/Industrial Saws25 2024Cranes0 2024Cranes0 2024Cranes50 2024Cranes75 2024Cranes100 2024Cranes175 2024Cranes300 2024Cranes600 2024Cranes600 2024Crawler Tractors25 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors75 2024Crawler Tractors175 2024Crawler Tractors175 2024Crawler Tractors100 2024Crawler Tractors300 2024Crawler Tractors50 2024Excavators0 2024Excavators50 2024Excavators50 2024Excavators75 2024Excavators175 2024Excavators175 2024Excavators300 2024Excavators500 2024Excavators750	25 50 75 100 175 300 600 750 0 0 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 0 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 750 750 750 750 750 750 750 750 7	0.220 0.090 0.090 0.090 0.090 0.090 0.090 0.554 0.593 0.220 1.235 0.220 0.090	4.630 2.740 2.740 2.320 2.320 2.320 2.320 4.202 4.531 4.630 4.864 4.630 2.740 2.320	4.100 3.700 3.700 2.600 2.600 2.600 2.600 3.257 2.447 4.100 5.722 4.100 3.700 3.700 2.600	0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.090 0.164 0.169 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.090 0.110	0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.080 0.151 0.156 0.260 0.351 0.260 0.180 0.100 0.080 0.080 0.080 0.080 0.100 0.261	0.006 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.009 0.008 0.005	598.652 518.484 521.434 532.059 524.922 522.319 532.561 526.939 570.167 594.363 574.905 586.607 592.536 531.141 526.264 528.401 527.567 527.532 527.321 527.566 583.519 527.171 528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.024 0.021 0.021 0.022 0.021 0.022 0.021 0.023 0.024 0.023 0.024 0.022 0.021	0.005 0.004 0.004 0.004 0.004 0.004 0.005 0.005 0.005 0.005 0.005 0.004
Bore/Drill Rigs Bore/Drill Rig	2024 2024 2024 2024 2024 2024 2024 2024	2024Bore/Drill Rigs50 2024Bore/Drill Rigs75 2024Bore/Drill Rigs100 2024Bore/Drill Rigs175 2024Bore/Drill Rigs300 2024Bore/Drill Rigs300 2024Bore/Drill Rigs600 2024Bore/Drill Rigs750 2024Cement and Mortar Mixers0 2024Concrete/Industrial Saws0 2024Concrete/Industrial Saws25 2024Cranes0 2024Cranes25 2024Cranes50 2024Cranes50 2024Cranes75 2024Cranes100 2024Cranes175 2024Cranes300 2024Cranes600 2024Cranes750 2024Crawler Tractors25 2024Crawler Tractors50 2024Crawler Tractors75 2024Crawler Tractors100 2024Crawler Tractors100 2024Crawler Tractors300 2024Crawler Tractors300 2024Crawler Tractors50 2024Excawators50 2024Excavators0 2024Excavators55 2024Excavators175 2024Excavators175 2024Excavators175 2024Excavators175 2024Excavators300 2024Excavators175 2024Excavators300 2024Excavators500 2024Excavators500 2024Excavators750	50 75 100 175 300 600 750 0 25 0 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 0 0 175 300 600 750 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 100 175 300 600 750 100 175 300 600 750 100 175 300 600 750 100 175 300 600 750 100 175 300 600 750 100 175 300 600 750 100 175 300 600 750 00 750 00 175 300 600 750 00 175 300 600 750 00 175 300 600 750 00 175 300 600 750 00 175 300 600 750 00 175 300 600 750 00 175 300 600 750 00 175 300 600 750 00 175 300 600 750 00 175 300 600 750 00 175 300 600 750 00 175 100 100 100 100 100 100 100 10	0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.554 0.593 0.220 1.235 0.220 0.090	2.740 2.740 2.320 2.320 2.320 2.320 4.202 4.531 4.630 4.864 4.630 2.740 2.320	3.700 3.700 2.600 2.600 2.600 2.600 3.257 2.447 4.100 5.722 4.100 3.700 3.700 2.600 2.600 2.600 2.600 4.100 3.700 3.700 3.700 3.700 2.600	0.190 0.110 0.110 0.090 0.090 0.090 0.090 0.164 0.169 0.280 0.382 0.280 0.190 0.110 0.090 0.090 0.090 0.090 0.110 0.110 0.090 0.110	0.180 0.100 0.100 0.100 0.080 0.080 0.080 0.151 0.156 0.260 0.351 0.260 0.180 0.100 0.080 0.080 0.080 0.080 0.100	0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.009 0.008 0.007 0.005	518.484 521.434 532.059 524.922 522.319 532.561 526.939 570.167 594.363 574.905 586.607 592.536 531.141 526.264 528.401 527.567 527.532 527.321 527.566 583.519 527.171 528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.021 0.021 0.022 0.021 0.022 0.021 0.023 0.024 0.023 0.024 0.022 0.021	0.004 0.004 0.004 0.004 0.004 0.004 0.005 0.005 0.005 0.005 0.004
Bore/Drill Rigs Bore/Drill Rig	2024 2024 2024 2024 2024 2024 2024 2024	2024Bore/Drill Rigs100 2024Bore/Drill Rigs300 2024Bore/Drill Rigs300 2024Bore/Drill Rigs600 2024Cement and Mortar Mixers0 2024Concrete/Industrial Saws0 2024Concrete/Industrial Saws25 2024Cranes0 2024Cranes0 2024Cranes50 2024Cranes50 2024Cranes75 2024Cranes100 2024Cranes175 2024Cranes600 2024Cranes750 2024Cranes750 2024Cranes750 2024Cranes750 2024Cranes750 2024Cranes750 2024Crawler Tractors25 2024Crawler Tractors50 2024Crawler Tractors75 2024Crawler Tractors100 2024Crawler Tractors100 2024Crawler Tractors175 2024Crawler Tractors50 2024Excavators50 2024Excavators50 2024Excavators50 2024Excavators100 2024Excavators175 2024Excavators600 2024Excavators750	100 175 300 600 750 0 0 25 0 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 0 0 0 175 300 600 750 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 100 175 300 600 750 100 175 300 600 750 100 175 300 600 750 175 300 600 750 175 300 600 750 175 300 600 750 0 175 300 600 750 0 175 300 600 750 0 0 0 175 300 600 750 0 0 0 0 175 300 600 750 0 0 0 0 0 0 0 0 0 0 0 0 0	0.090 0.090 0.090 0.090 0.090 0.554 0.593 0.220 1.235 0.220 0.090	2.320 2.320 2.320 4.202 4.531 4.630 4.864 4.630 2.740 2.320 2.740	3.700 2.600 2.600 2.600 3.257 2.447 4.100 5.722 4.100 3.700 3.700 2.600 2.600 2.600 4.100 3.700 3.700 3.700 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600	0.110 0.090 0.090 0.090 0.090 0.164 0.169 0.280 0.382 0.280 0.190 0.110 0.090 0.090 0.090 0.280 0.190 0.110 0.110 0.090 0.090 0.190 0.110	0.100 0.080 0.080 0.080 0.080 0.151 0.156 0.260 0.351 0.260 0.180 0.100 0.080 0.080 0.080 0.080 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.261 0.261 0.261	0.005 0.005 0.005 0.005 0.009 0.008 0.007 0.005	532.059 524.922 522.319 532.561 526.939 570.167 594.363 574.905 586.607 592.536 531.141 526.264 528.401 527.567 527.532 527.532 527.321 527.566 583.519 527.171 528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.022 0.021 0.021 0.022 0.021 0.023 0.024 0.023 0.024 0.022 0.021	0.004 0.004 0.004 0.004 0.005 0.005 0.005 0.005 0.004
Bore/Drill Rigs Bore/Drill Rig	2024 2024 2024 2024 2024 2024 2024 2024	2024Bore/Drill Rigs300 2024Bore/Drill Rigs300 2024Bore/Drill Rigs600 2024Cement and Mortar Mixers0 2024Concrete/Industrial Saws0 2024Concrete/Industrial Saws25 2024Cranes0 2024Cranes25 2024Cranes50 2024Cranes75 2024Cranes100 2024Cranes175 2024Cranes300 2024Cranes750 2024Cranes750 2024Cranes750 2024Cranes750 2024Cranes750 2024Cranes750 2024Cranes750 2024Crawler Tractors25 2024Crawler Tractors50 2024Crawler Tractors75 2024Crawler Tractors100 2024Crawler Tractors100 2024Crawler Tractors175 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors75 2024Crawler Tractors75 2024Crawler Tractors600 2024Crawler Tractors50 2024Excavators50 2024Excavators50 2024Excavators50 2024Excavators175 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators750	175 300 600 750 0 0 25 0 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 0 0 25 50 75	0.090 0.090 0.090 0.090 0.554 0.593 0.220 1.235 0.220 0.090	2.320 2.320 2.320 4.202 4.531 4.630 4.864 4.630 2.740 2.320	2.600 2.600 2.600 3.257 2.447 4.100 5.722 4.100 3.700 3.700 2.600 2.600 2.600 4.100 3.700 3.700 3.700 2.600	0.090 0.090 0.090 0.090 0.164 0.169 0.280 0.382 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.190 0.110 0.110 0.110 0.110 0.110 0.150 0.110	0.080 0.080 0.080 0.080 0.151 0.156 0.260 0.351 0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.261 0.261 0.261	0.005 0.005 0.005 0.005 0.009 0.008 0.007 0.005	524.922 522.319 532.561 526.939 570.167 594.363 574.905 586.607 592.536 531.141 526.264 528.401 527.567 527.532 527.532 527.321 527.566 583.519 527.171 528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.021 0.021 0.022 0.021 0.023 0.024 0.023 0.024 0.022 0.021	0.004 0.004 0.004 0.005 0.005 0.005 0.005 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.005 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004
Bore/Drill Rigs Bore/Drill Rig	2024 2024 2024 2024 2024 2024 2024 2024	2024Bore/Drill Rigs300 2024Bore/Drill Rigs600 2024Cement and Mortar Mixers0 2024Concrete/Industrial Saws0 2024Concrete/Industrial Saws25 2024Cranes0 2024Cranes50 2024Cranes50 2024Cranes75 2024Cranes75 2024Cranes100 2024Cranes75 2024Cranes75 2024Cranes75 2024Cranes750 2024Cranes750 2024Cranes750 2024Crawler Tractors25 2024Crawler Tractors50 2024Crawler Tractors75 2024Crawler Tractors100 2024Crawler Tractors100 2024Crawler Tractors300 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors100 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors75 2024Crawler Tractors50 2024Crawler Tractors750 2024Excavators0 2024Excavators0 2024Excavators50 2024Excavators100 2024Excavators175 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators600 2024Excavators600 2024Excavators750	300 600 750 0 0 25 0 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 0 0 25 50 75	0.090 0.090 0.090 0.554 0.593 0.220 1.235 0.220 0.090	2.320 2.320 4.202 4.531 4.630 4.864 4.630 2.740 2.320 2.320 2.320 2.320 2.320 4.630 2.740 2.320	2.600 2.600 2.600 3.257 2.447 4.100 5.722 4.100 3.700 3.700 2.600 2.600 2.600 4.100 3.700 3.700 3.700 2.600	0.090 0.090 0.090 0.164 0.169 0.280 0.382 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.110	0.080 0.080 0.080 0.080 0.151 0.156 0.260 0.351 0.260 0.180 0.100 0.080 0.080 0.080 0.080 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.261 0.231 0.260	0.005 0.005 0.005 0.009 0.008 0.007 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005	522.319 532.561 526.939 570.167 594.363 574.905 586.607 592.536 531.141 526.264 528.401 527.567 527.532 527.321 527.566 583.519 527.171 528.713 527.599 527.475 527.935 527.935 524.584 531.504 573.018 845.871 587.317	0.021 0.022 0.021 0.023 0.024 0.023 0.024 0.024 0.022 0.021	0.004 0.004 0.005 0.005 0.005 0.005 0.005 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.005 0.004 0.005 0.007 0.005 0.004
Bore/Drill Rigs Cement and Mortar Mixers Concrete/Industrial Saws Concrete/Industrial Saws Concrete/Industrial Saws Cranes Crawler Tractors	2024 2024 2024 2024 2024 2024 2024 2024	2024Bore/Drill Rigs750 2024Cement and Mortar Mixers0 2024Concrete/Industrial Saws0 2024Cranes0 2024Cranes0 2024Cranes25 2024Cranes50 2024Cranes75 2024Cranes100 2024Cranes175 2024Cranes300 2024Cranes600 2024Cranes750 2024Cranes750 2024Crawler Tractors25 2024Crawler Tractors50 2024Crawler Tractors100 2024Crawler Tractors175 2024Crawler Tractors175 2024Crawler Tractors50 2024Crawler Tractors75 2024Crawler Tractors75 2024Crawler Tractors75 2024Crawler Tractors50 2024Crawler Tractors100 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors600 2024Crawler Tractors750 2024Excavators0 2024Excavators0 2024Excavators0 2024Excavators150 2024Excavators175 2024Excavators300 2024Excavators300 2024Excavators600 2024Excavators600 2024Excavators600 2024Excavators600 2024Excavators750	750 0 0 25 0 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 0 0 25 50 75	0.090 0.554 0.593 0.220 1.235 0.220 0.090	2.320 4.202 4.531 4.630 4.864 4.630 2.740 2.320 2.320 2.320 2.320 4.630 2.740 2.320 2.320 2.320 2.320 2.320 2.320 2.320 2.320 2.320 2.320 2.320 2.320 2.320 2.320 2.320 2.320	2.600 3.257 2.447 4.100 5.722 4.100 3.700 3.700 2.600 2.600 2.600 4.100 3.700 3.700 3.700 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600	0.090 0.164 0.169 0.280 0.382 0.280 0.190 0.110 0.090 0.090 0.090 0.110 0.110 0.110 0.090 0.110 0.110 0.090 0.110 0.110 0.090 0.110 0.110 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.163 0.251 0.280	0.080 0.151 0.156 0.260 0.351 0.260 0.180 0.100 0.080 0.080 0.080 0.260 0.180 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.261 0.100 0.261 0.100 0.261 0.261 0.260	0.005 0.009 0.008 0.007 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005	526.939 570.167 594.363 574.905 586.607 592.536 531.141 526.264 528.401 527.567 527.532 527.321 527.566 583.519 527.171 528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.021 0.023 0.024 0.023 0.024 0.024 0.022 0.021	0.004 0.005 0.005 0.005 0.005 0.005 0.004 0.004 0.004 0.004 0.004 0.005 0.004 0.005 0.007 0.005
Cement and Mortar Mixers Concrete/Industrial Saws Concrete/Industrial Saws Concrete/Industrial Saws Cranes Crawler Tractors Crawle	2024 2024 2024 2024 2024 2024 2024 2024	2024Cement and Mortar Mixers0 2024Concrete/Industrial Saws0 2024Cranes0 2024Cranes25 2024Cranes50 2024Cranes75 2024Cranes100 2024Cranes175 2024Cranes300 2024Cranes600 2024Cranes750 2024Cranes750 2024Cranes750 2024Crawler Tractors25 2024Crawler Tractors50 2024Crawler Tractors100 2024Crawler Tractors175 2024Crawler Tractors175 2024Crawler Tractors50 2024Crawler Tractors75 2024Crawler Tractors75 2024Crawler Tractors75 2024Crawler Tractors100 2024Crawler Tractors25 2024Crawler Tractors25 2024Crawler Tractors500 2024Crawler Tractors500 2024Crawler Tractors750 2024Crawler Tractors750 2024Excavators0 2024Excavators0 2024Excavators0 2024Excavators100 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators600 2024Excavators750	0 0 25 0 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 0 0 25 50 75 100 175 300 600 750	0.554 0.593 0.220 1.235 0.220 0.090	4.202 4.531 4.630 4.864 4.630 2.740 2.320 2.320 2.320 2.320 4.630 2.740 2.320 2.320 2.320 2.320 2.320 2.320 2.320 2.320 2.320 2.320 2.320 2.320 2.320 2.320	3.257 2.447 4.100 5.722 4.100 3.700 3.700 2.600 2.600 2.600 4.100 3.700 3.700 3.700 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600	0.164 0.169 0.280 0.382 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.110 0.110 0.110 0.090 0.110 0.110 0.090 0.110 0.110 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.163 0.251 0.280	0.151 0.156 0.260 0.351 0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.080	0.009 0.008 0.007 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005	570.167 594.363 574.905 586.607 592.536 531.141 526.264 528.401 527.567 527.532 527.532 527.566 583.519 527.171 528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.023 0.024 0.023 0.024 0.024 0.022 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021	0.005 0.005 0.005 0.005 0.005 0.004 0.004 0.004 0.004 0.004 0.005 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.005 0.004 0.004 0.005 0.004 0.004 0.004 0.004 0.004
Concrete/Industrial Saws Concrete/Industrial Saws Concrete/Industrial Saws Coranes Cranes Crawler Tractors	2024 2024 2024 2024 2024 2024 2024 2024	2024Concrete/Industrial Saws25 2024Cranes0 2024Cranes25 2024Cranes50 2024Cranes75 2024Cranes75 2024Cranes100 2024Cranes300 2024Cranes600 2024Cranes750 2024Cranes750 2024Cranes750 2024Crawler Tractors25 2024Crawler Tractors50 2024Crawler Tractors100 2024Crawler Tractors175 2024Crawler Tractors100 2024Crawler Tractors100 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors175 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors600 2024Crawler Tractors750 2024Excavators0 2024Excavators0 2024Excavators0 2024Excavators50 2024Excavators175 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators750	0 25 0 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 0 0 25 50 75	0.593 0.220 1.235 0.220 0.090	4.531 4.630 4.864 4.630 2.740 2.320 2.320 2.320 2.320 2.320 4.630 2.740 2.320 2.740	2.447 4.100 5.722 4.100 3.700 3.700 2.600 2.600 2.600 4.100 3.700 3.700 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600	0.169 0.280 0.382 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.163 0.251 0.280	0.156 0.260 0.351 0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.180 0.100 0.100 0.100 0.100 0.100 0.100 0.100 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.150 0.231 0.260	0.008 0.007 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005	594.363 574.905 586.607 592.536 531.141 526.264 527.567 527.532 527.532 527.321 527.566 583.519 527.171 528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.024 0.023 0.024 0.024 0.022 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021	0.005 0.005 0.005 0.005 0.004 0.004 0.004 0.004 0.004 0.005 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.005 0.004 0.005 0.004 0.004 0.005 0.004
Cranes Crawler Crawler Tractors Cr	2024 2024 2024 2024 2024 2024 2024 2024	2024Cranes25 2024Cranes50 2024Cranes50 2024Cranes75 2024Cranes100 2024Cranes175 2024Cranes300 2024Cranes600 2024Cranes750 2024Crawler Tractors25 2024Crawler Tractors50 2024Crawler Tractors100 2024Crawler Tractors175 2024Crawler Tractors300 2024Crawler Tractors300 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors175 2024Crawler Tractors50 2024Crawler Tractors500 2024Crawler Tractors500 2024Crawler Tractors50 2024Crawler Tractors750 2024Excavators0 2024Excavators0 2024Excavators0 2024Excavators50 2024Excavators100 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators600 2024Excavators750	0 25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 0 0 25 50 75 100 175 300 600 750	1.235 0.220 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.571 0.881 0.220 0.090 0.090 0.090 0.090 0.090 0.090 0.090	4.864 4.630 2.740 2.740 2.320 2.320 2.320 2.320 4.630 2.740 2.320 2.320 2.320 2.320 2.320 4.368 6.483 4.630 2.740 2.740	5.722 4.100 3.700 3.700 2.600 2.600 2.600 4.100 3.700 3.700 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600 2.600	0.382 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.163 0.251 0.280	0.351 0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.150 0.231 0.260	0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005	586.607 592.536 531.141 526.264 528.401 527.567 527.532 527.321 527.566 583.519 527.171 528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.024 0.024 0.022 0.021 0.021 0.021 0.021 0.021 0.024 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021	0.005 0.005 0.004 0.004 0.004 0.004 0.005 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.005 0.007 0.005 0.004
Cranes Crawler Tractors Crawler Tr	2024 2024 2024 2024 2024 2024 2024 2024	2024Cranes25 2024Cranes50 2024Cranes75 2024Cranes100 2024Cranes175 2024Cranes300 2024Cranes600 2024Cranes750 2024Crawler Tractors25 2024Crawler Tractors50 2024Crawler Tractors75 2024Crawler Tractors100 2024Crawler Tractors175 2024Crawler Tractors300 2024Crawler Tractors300 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors750 2024Crawler Tractors750 2024Excavators50 2024Excavators0 2024Excavators50 2024Excavators100 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators600 2024Excavators750	25 50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 0 0 25 50 75 100 175 300 600	0.220 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.571 0.881 0.220 0.090 0.090 0.090 0.090 0.090	4.630 2.740 2.740 2.320 2.320 2.320 2.320 4.630 2.740 2.320 2.320 2.320 2.320 4.368 6.483 4.630 2.740 2.740	4.100 3.700 3.700 3.700 2.600 2.600 2.600 4.100 3.700 3.700 2.600 2.600 2.600 2.600 2.600 2.600 4.100	0.280 0.190 0.110 0.090 0.090 0.090 0.090 0.190 0.110 0.110 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090	0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.080 0.080 0.080 0.080 0.150 0.231 0.260	0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005	592.536 531.141 526.264 528.401 527.567 527.532 527.321 527.566 583.519 527.171 528.713 527.599 527.475 527.935 527.935 524.584 531.504 573.018 845.871 587.317	0.024 0.022 0.021 0.021 0.021 0.021 0.021 0.024 0.021 0.021 0.021 0.021 0.021 0.021 0.022 0.023 0.034 0.024 0.024	0.005 0.004 0.004 0.004 0.004 0.004 0.005 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.005 0.004 0.005 0.005 0.007
Cranes Crawler Tractors Crawler	2024 2024 2024 2024 2024 2024 2024 2024	2024Cranes75 2024Cranes75 2024Cranes100 2024Cranes175 2024Cranes300 2024Cranes600 2024Cranes750 2024Crawler Tractors25 2024Crawler Tractors50 2024Crawler Tractors75 2024Crawler Tractors100 2024Crawler Tractors175 2024Crawler Tractors300 2024Crawler Tractors600 2024Crawler Tractors75 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors50 2024Crawler Tractors750 2024Crawler Tractors750 2024Crawler Tractors750 2024Excavators0 2024Excavators0 2024Excavators0 2024Excavators100 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators750	50 75 100 175 300 600 750 25 50 75 100 175 300 600 750 0 0 25 50 75 100 175 300 600 750	0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.571 0.881 0.220 0.090 0.090 0.090	2.740 2.740 2.320 2.320 2.320 2.320 4.630 2.740 2.320 2.320 2.320 2.320 4.368 6.483 4.630 2.740 2.740	3.700 3.700 2.600 2.600 2.600 4.100 3.700 3.700 3.700 2.600 2.600 2.600 2.600 2.500 4.100	0.190 0.110 0.110 0.090 0.090 0.090 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.090 0.090 0.163 0.251 0.280	0.180 0.100 0.100 0.080 0.080 0.080 0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.080 0.080 0.231 0.260	0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005	531.141 526.264 528.401 527.567 527.532 527.321 527.566 583.519 527.171 528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.022 0.021 0.021 0.021 0.021 0.021 0.024 0.021 0.021 0.021 0.021 0.021 0.022 0.023 0.034 0.024 0.024	0.004 0.004 0.004 0.004 0.004 0.005 0.004 0.004 0.004 0.004 0.004 0.004 0.005 0.005 0.007 0.005 0.005
Cranes Crawler Tractors Craw	2024 2024 2024 2024 2024 2024 2024 2024	2024Cranes175 2024Cranes300 2024Cranes600 2024Cranes750 2024Crawler Tractors25 2024Crawler Tractors50 2024Crawler Tractors75 2024Crawler Tractors100 2024Crawler Tractors175 2024Crawler Tractors175 2024Crawler Tractors300 2024Crawler Tractors300 2024Crawler Tractors500 2024Crawler Tractors600 2024Crawler Tractors750 2024Dumpers/Tenders0 2024Excavators0 2024Excavators50 2024Excavators50 2024Excavators100 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators600 2024Excavators750	75 100 175 300 600 750 25 50 75 100 175 300 600 750 0 0 25 50 75 100 175 300 600	0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.090 0.571 0.881 0.220 0.090 0.090	2.740 2.320 2.320 2.320 2.320 4.630 2.740 2.320 2.320 2.320 2.320 4.368 6.483 4.630 2.740 2.740	3.700 3.700 2.600 2.600 2.600 4.100 3.700 3.700 3.700 2.600 2.600 2.600 2.359 3.580 4.100	0.110 0.110 0.090 0.090 0.090 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.163 0.251	0.100 0.100 0.080 0.080 0.080 0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.080 0.080 0.231 0.260	0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005	526.264 528.401 527.567 527.532 527.321 527.566 583.519 527.171 528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.021 0.022 0.023 0.034 0.024 0.024	0.004 0.004 0.004 0.004 0.004 0.005 0.004 0.004 0.004 0.004 0.004 0.005 0.007 0.005
Cranes Cranes Cranes Cranes Cranes Crawler Tractors Crawl	2024 2024 2024 2024 2024 2024 2024 2024	2024Cranes175 2024Cranes300 2024Cranes600 2024Crawler Tractors25 2024Crawler Tractors50 2024Crawler Tractors75 2024Crawler Tractors100 2024Crawler Tractors175 2024Crawler Tractors300 2024Crawler Tractors300 2024Crawler Tractors500 2024Crawler Tractors500 2024Crawler Tractors600 2024Crawler Tractors750 2024Crawler Tractors750 2024Excavators0 2024Excavators0 2024Excavators0 2024Excavators50 2024Excavators100 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators600 2024Excavators750	175 300 600 750 25 50 75 100 175 300 600 750 0 0 25 50 75 100 175 300 600	0.090 0.090 0.090 0.090 0.220 0.090 0.090 0.090 0.090 0.090 0.571 0.881 0.220 0.090 0.090 0.090	2.320 2.320 2.320 4.630 2.740 2.740 2.320 2.320 2.320 2.320 4.368 6.483 4.630 2.740 2.740	2.600 2.600 2.600 4.100 3.700 3.700 2.600 2.600 2.600 2.359 3.580 4.100	0.090 0.090 0.090 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.163 0.251	0.080 0.080 0.080 0.080 0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.150 0.231	0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.007 0.011	527.567 527.532 527.321 527.566 583.519 527.171 528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.021 0.021 0.021 0.024 0.021 0.021 0.021 0.021 0.021 0.021 0.022 0.023 0.034 0.024 0.021	0.004 0.004 0.004 0.005 0.004 0.004 0.004 0.004 0.004 0.005 0.007 0.005 0.005
Cranes Cranes Cranes Crawler Tractors Cr	2024 2024 2024 2024 2024 2024 2024 2024	2024Cranes300 2024Cranes750 2024Crawler Tractors25 2024Crawler Tractors50 2024Crawler Tractors75 2024Crawler Tractors100 2024Crawler Tractors175 2024Crawler Tractors300 2024Crawler Tractors300 2024Crawler Tractors300 2024Crawler Tractors500 2024Crawler Tractors500 2024Crawler Tractors750 2024Excavators75 2024Excavators0 2024Excavators0 2024Excavators50 2024Excavators75 2024Excavators100 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators750	300 600 750 25 50 75 100 175 300 600 750 0 0 25 50 75 100 175 300 600	0.090 0.090 0.090 0.220 0.090 0.090 0.090 0.090 0.571 0.881 0.220 0.090 0.090 0.090	2.320 2.320 4.630 2.740 2.740 2.320 2.320 2.320 2.320 4.368 6.483 4.630 2.740 2.740	2.600 2.600 4.100 3.700 3.700 2.600 2.600 2.600 2.359 3.580 4.100	0.090 0.090 0.090 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.163 0.251 0.280	0.080 0.080 0.080 0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.080 0.150 0.231	0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.007 0.011 0.005	527.532 527.321 527.566 583.519 527.171 528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.021 0.021 0.024 0.021 0.021 0.021 0.021 0.021 0.021 0.022 0.023 0.034 0.024 0.021	0.004 0.004 0.005 0.004 0.004 0.004 0.004 0.004 0.004 0.005 0.007 0.005 0.005
Cranes Crawler Tractors	2024 2024 2024 2024 2024 2024 2024 2024	2024Cranes750 2024Crawler Tractors25 2024Crawler Tractors50 2024Crawler Tractors75 2024Crawler Tractors100 2024Crawler Tractors175 2024Crawler Tractors300 2024Crawler Tractors300 2024Crawler Tractors600 2024Crawler Tractors750 2024Crawler Tractors750 2024Crawler Tractors750 2024Excavators75 2024Excavators0 2024Excavators0 2024Excavators50 2024Excavators75 2024Excavators100 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators600 2024Excavators750	600 750 25 50 75 100 175 300 600 750 0 0 25 50 75 100 175 300 600	0.090 0.090 0.220 0.090 0.090 0.090 0.090 0.090 0.571 0.881 0.220 0.090 0.090 0.090	2.320 2.320 4.630 2.740 2.740 2.320 2.320 2.320 2.320 4.368 6.483 4.630 2.740 2.740	2.600 2.600 4.100 3.700 3.700 2.600 2.600 2.600 2.359 3.580 4.100	0.090 0.090 0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.163 0.251	0.080 0.080 0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.150 0.231	0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.007 0.011 0.005	527.321 527.566 583.519 527.171 528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.021 0.024 0.021 0.021 0.021 0.021 0.021 0.021 0.022 0.023 0.034 0.024 0.021	0.004 0.004 0.005 0.004 0.004 0.004 0.004 0.004 0.005 0.007 0.005 0.005
Crawler Tractors Excavators Ex	2024 2024 2024 2024 2024 2024 2024 2024	2024Crawler Tractors25 2024Crawler Tractors50 2024Crawler Tractors75 2024Crawler Tractors100 2024Crawler Tractors175 2024Crawler Tractors300 2024Crawler Tractors600 2024Crawler Tractors600 2024Crawler Tractors750 2024Dumpers/Tenders0 2024Excavators0 2024Excavators25 2024Excavators50 2024Excavators50 2024Excavators100 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators600 2024Excavators750	25 50 75 100 175 300 600 750 0 0 25 50 75 100 175 300 600	0.220 0.090 0.090 0.090 0.090 0.090 0.090 0.571 0.881 0.220 0.090 0.090 0.090	4.630 2.740 2.740 2.320 2.320 2.320 2.320 4.368 6.483 4.630 2.740 2.740	4.100 3.700 3.700 3.700 2.600 2.600 2.600 2.359 3.580 4.100	0.280 0.190 0.110 0.110 0.090 0.090 0.090 0.163 0.251 0.280	0.260 0.180 0.100 0.100 0.080 0.080 0.080 0.150 0.231 0.260	0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.007 0.011 0.005	583.519 527.171 528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.024 0.021 0.021 0.021 0.021 0.021 0.022 0.023 0.034 0.024 0.021	0.005 0.004 0.004 0.004 0.004 0.004 0.004 0.005 0.007 0.005 0.005
Crawler Tractors Excavators Ex	2024 2024 2024 2024 2024 2024 2024 2024	2024Crawler Tractors50 2024Crawler Tractors75 2024Crawler Tractors100 2024Crawler Tractors175 2024Crawler Tractors300 2024Crawler Tractors600 2024Crawler Tractors750 2024Dumpers/Tenders0 2024Excavators0 2024Excavators25 2024Excavators50 2024Excavators75 2024Excavators100 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators600 2024Excavators750	50 75 100 175 300 600 750 0 0 25 50 75 100 175 300 600	0.090 0.090 0.090 0.090 0.090 0.090 0.571 0.881 0.220 0.090 0.090 0.090	2.740 2.740 2.320 2.320 2.320 2.320 2.320 4.368 6.483 4.630 2.740 2.740	3.700 3.700 2.600 2.600 2.600 2.600 2.359 3.580 4.100	0.190 0.110 0.110 0.090 0.090 0.090 0.163 0.251 0.280	0.180 0.100 0.100 0.080 0.080 0.080 0.150 0.231	0.005 0.005 0.005 0.005 0.005 0.005 0.005 0.007 0.011 0.005	527.171 528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.021 0.021 0.021 0.021 0.021 0.022 0.023 0.034 0.024 0.021	0.004 0.004 0.004 0.004 0.004 0.004 0.005 0.007 0.005 0.004
Crawler Tractors Crawle	2024 2024 2024 2024 2024 2024 2024 2024	2024Crawler Tractors75 2024Crawler Tractors100 2024Crawler Tractors175 2024Crawler Tractors300 2024Crawler Tractors600 2024Crawler Tractors750 2024Dumpers/Tenders0 2024Excavators0 2024Excavators25 2024Excavators50 2024Excavators75 2024Excavators100 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators600 2024Excavators750	75 100 175 300 600 750 0 0 25 50 75 100 175 300 600	0.090 0.090 0.090 0.090 0.090 0.571 0.881 0.220 0.090 0.090 0.090	2.740 2.320 2.320 2.320 2.320 2.320 4.368 6.483 4.630 2.740 2.740	3.700 3.700 2.600 2.600 2.600 2.359 3.580 4.100	0.110 0.110 0.090 0.090 0.090 0.090 0.163 0.251 0.280	0.100 0.100 0.080 0.080 0.080 0.080 0.150 0.231	0.005 0.005 0.005 0.005 0.005 0.005 0.007 0.011 0.005	528.713 527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.021 0.021 0.021 0.021 0.021 0.022 0.023 0.034 0.024 0.021	0.004 0.004 0.004 0.004 0.004 0.005 0.007 0.005 0.004
Crawler Tractors Crawle	2024 2024 2024 2024 2024 2024 2024 2024	2024Crawler Tractors100 2024Crawler Tractors175 2024Crawler Tractors300 2024Crawler Tractors600 2024Crawler Tractors750 2024Dumpers/Tenders0 2024Excavators0 2024Excavators25 2024Excavators50 2024Excavators75 2024Excavators100 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators750	100 175 300 600 750 0 0 25 50 75 100 175 300 600	0.090 0.090 0.090 0.090 0.571 0.881 0.220 0.090 0.090 0.090	2.320 2.320 2.320 2.320 2.320 4.368 6.483 4.630 2.740 2.740	3.700 2.600 2.600 2.600 2.600 2.359 3.580 4.100	0.110 0.090 0.090 0.090 0.090 0.163 0.251 0.280	0.100 0.080 0.080 0.080 0.080 0.150 0.231	0.005 0.005 0.005 0.005 0.005 0.007 0.011 0.005	527.599 527.475 527.935 524.584 531.504 573.018 845.871 587.317	0.021 0.021 0.021 0.021 0.022 0.023 0.034 0.024 0.021	0.004 0.004 0.004 0.004 0.005 0.007 0.005 0.004
Crawler Tractors Crawle	2024 2024 2024 2024 2024 2024 2024 2024	2024Crawler Tractors300 2024Crawler Tractors600 2024Crawler Tractors750 2024Dumpers/Tenders0 2024Excavators0 2024Excavators25 2024Excavators50 2024Excavators75 2024Excavators100 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators750	300 600 750 0 0 25 50 75 100 175 300 600	0.090 0.090 0.090 0.571 0.881 0.220 0.090 0.090 0.090	2.320 2.320 2.320 4.368 6.483 4.630 2.740 2.740	2.600 2.600 2.600 2.359 3.580 4.100	0.090 0.090 0.090 0.163 0.251 0.280	0.080 0.080 0.080 0.150 0.231 0.260	0.005 0.005 0.005 0.007 0.011 0.005	527.935 524.584 531.504 573.018 845.871 587.317	0.021 0.021 0.022 0.023 0.034 0.024 0.021	0.004 0.004 0.005 0.007 0.005 0.004
Crawler Tractors Crawler Tractors Cumpers/Tenders Excavators Excav	2024 2024 2024 2024 2024 2024 2024 2024	2024Crawler Tractors600 2024Crawler Tractors750 2024Dumpers/Tenders0 2024Excavators0 2024Excavators25 2024Excavators50 2024Excavators75 2024Excavators100 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators750	600 750 0 0 25 50 75 100 175 300 600	0.090 0.090 0.571 0.881 0.220 0.090 0.090 0.090	2.320 2.320 4.368 6.483 4.630 2.740 2.740	2.600 2.600 2.359 3.580 4.100	0.090 0.090 0.163 0.251 0.280	0.080 0.080 0.150 0.231 0.260	0.005 0.005 0.007 0.011 0.005	524.584 531.504 573.018 845.871 587.317	0.021 0.022 0.023 0.034 0.024 0.021	0.004 0.004 0.005 0.007 0.005 0.004
crawler Tractors coumpers/Tenders excavators	2024 2024 2024 2024 2024 2024 2024 2024	2024Crawler Tractors750 2024Dumpers/Tenders0 2024Excavators0 2024Excavators25 2024Excavators50 2024Excavators75 2024Excavators100 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators750	750 0 0 25 50 75 100 175 300 600	0.090 0.571 0.881 0.220 0.090 0.090 0.090	2.320 4.368 6.483 4.630 2.740 2.740	2.600 2.359 3.580 4.100	0.090 0.163 0.251 0.280	0.080 0.150 0.231 0.260	0.005 0.007 0.011 0.005	531.504 573.018 845.871 587.317	0.022 0.023 0.034 0.024 0.021	0.004 0.005 0.007 0.005 0.004
xcavators orklifts orklifts orklifts orklifts orklifts orklifts orklifts sorklifts orklifts orklifts fenerator Sets	2024 2024 2024 2024 2024 2024 2024 2024	2024Excavators0 2024Excavators25 2024Excavators50 2024Excavators75 2024Excavators100 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators750	0 25 50 75 100 175 300 600	0.881 0.220 0.090 0.090 0.090 0.090	6.483 4.630 2.740 2.740	3.580 4.100	0.251 0.280	0.231 0.260	0.011 0.005	845.871 587.317	0.034 0.024 0.021	0.007 0.005 0.004
excavators	2024 2024 2024 2024 2024 2024 2024 2024	2024Excavators25 2024Excavators50 2024Excavators75 2024Excavators100 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators750	25 50 75 100 175 300 600	0.220 0.090 0.090 0.090 0.090	4.630 2.740 2.740	4.100	0.280	0.260	0.005	587.317	0.024 0.021	0.005 0.004
Excavators Excavators Excavators Excavators Excavators Excavators Excavators Excavators Excavators Forklifts Forklif	2024 2024 2024 2024 2024 2024 2024 2024	2024Excavators50 2024Excavators75 2024Excavators100 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators750	50 75 100 175 300 600	0.090 0.090 0.090 0.090	2.740 2.740						0.021	0.004
Excavators Excavators Excavators Excavators Excavators Excavators Excavators Forklifts	2024 2024 2024 2024 2024 2024	2024Excavators100 2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators750	100 175 300 600	0.090 0.090			0.190	0.180	0.003			0.004
Excavators Excavators Excavators Excavators Excavators Excavators Forklifts	2024 2024 2024 2024 2024	2024Excavators175 2024Excavators300 2024Excavators600 2024Excavators750	175 300 600	0.090	חרכי	3.700	0.110	0.100	0.005	525.352	0.021	
Excavators Excavators Excavators Forklifts For	2024 2024 2024 2024	2024Excavators300 2024Excavators600 2024Excavators750	300 600		2.320	3.700 2.600	0.110 0.090	0.100 0.080	0.005 0.005	527.999 528.451	0.021 0.021	0.004 0.004
Excavators Forklifts Forkl	2024 2024	2024Excavators750			2.320	2.600	0.090	0.080	0.005	527.003	0.021	0.004
Forklifts Generator Sets Generator Sets Generator Sets Generator Sets Graders Graders Graders Graders Graders	2024		750	0.090	2.320	2.600	0.090	0.080	0.005	530.825	0.022	0.004
Forklifts Forklifts Forklifts Forklifts Forklifts Forklifts Forklifts Forklifts Generator Sets Generator Sets Generator Sets Generator Sets Graders Graders Graders Graders Graders			25	0.090	2.320	2.600 4.100	0.090 0.280	0.080 0.260	0.005	533.664 587.146	0.022	0.004
Forklifts Forklifts Forklifts Forklifts Forklifts Forklifts Forklifts Generator Sets Generator Sets Generator Sets Generator Sets Generator Sets Graders Graders Graders Graders Graders Graders		2024F0fkiits25 2024Forklifts50	25 50	0.220 0.090	4.630 2.740	3.700	0.280	0.280	0.005 0.005	587.146	0.024 0.021	0.005 0.004
Forklifts Forklifts Forklifts Forklifts Generator Sets Generator Sets Generator Sets Generator Sets Graders Graders Graders Graders Graders	2024	2024Forklifts75	75	0.090	2.740	3.700	0.110	0.100	0.005	527.040	0.021	0.004
Forklifts Forklifts Forklifts Generator Sets Generator Sets Generator Sets Generator Sets Generator Sets Graders Graders Graders Graders Graders	2024	2024Forklifts100	100	0.090	2.320	3.700	0.110	0.100	0.005	527.512	0.021	0.004
Forklifts Forklifts Generator Sets Generator Sets Generator Sets Generator Sets Generator Sets Graders Graders Graders Graders Graders	2024 2024	2024Forklifts175 2024Forklifts300	175 300	0.090 0.090	2.320 2.320	2.600 2.600	0.090 0.090	0.080 0.080	0.005 0.005	528.244 531.099	0.021 0.022	0.004 0.004
Generator Sets Generator Sets Generator Sets Generator Sets Generator Sets Graders Graders Graders Graders Graders Graders	2024	2024Forklifts600	600	0.090	2.320	2.600	0.090	0.080	0.005	531.099	0.022	0.004
Generator Sets Generator Sets Generator Sets Graders Graders Graders Graders Graders Graders Graders	2024	2024Forklifts750	750	0.090	2.320	2.600	0.090	0.080	0.005	527.640	0.021	0.004
Generator Sets Generator Sets Graders Graders Graders Graders Graders	2024 2024	2024Generator Sets0 2024Generator Sets25	0 25	0.090 0.090	2.750 2.750	2.881 4.100	0.010 0.010	0.010 0.010	0.008 0.007	568.315 568.327	0.023 0.023	0.005 0.005
Graders Graders Graders Graders Graders	2024	2024Generator Sets25	50	0.090	2.740	4.100	0.010	0.010	0.007	568.327	0.023	0.005
Graders Graders Graders Graders	2024	2024Generator Sets75	75	0.090	2.740	3.700	0.010	0.010	0.007	568.327	0.023	0.005
Graders Graders Graders	2024	2024Graders0 2024Graders25	0	1.988	6.089 4.630	7.740	0.734	0.675	0.005	587.012	0.024	0.005
Graders Graders	2024 2024	2024Graders25 2024Graders50	25 50	0.220 0.090	4.630 2.740	4.100 3.700	0.280 0.190	0.260 0.180	0.005 0.005	586.703 548.264	0.024 0.022	0.005 0.004
	2024	2024Graders75	75	0.090	2.740	3.700	0.110	0.100	0.005	523.605	0.021	0.004
Graders	2024	2024Graders100	100	0.090	2.320	3.700	0.110	0.100	0.005	530.170	0.022	0.004
Graders	2024 2024	2024Graders175 2024Graders300	175 300	0.090 0.090	2.320 2.320	2.600 2.600	0.090 0.090	0.080 0.080	0.005 0.005	527.899 524.569	0.021 0.021	0.004 0.004
Graders	2024	2024Graders600	600	0.090	2.320	2.600	0.090	0.080	0.005	524.569	0.021	0.004
Graders	2024	2024Graders750	750	0.090	2.320	2.600	0.090	0.080	0.005	527.817	0.021	0.004
Off-Highway Tractors Off-Highway Tractors	2024 2024	2024Off-Highway Tractors0 2024Off-Highway Tractors25	0 25	4.056 0.220	7.675 4.630	11.147 4.100	1.055 0.280	0.971 0.260	0.005 0.005	586.526 585.564	0.024 0.024	0.005 0.005
Off-Highway Tractors	2024	2024Off-Highway Tractors50	50	0.220	2.740	3.700	0.280	0.280	0.005	527.719	0.024	0.003
Off-Highway Tractors	2024	2024Off-Highway Tractors75	75	0.090	2.740	3.700	0.110	0.100	0.005	529.217	0.021	0.004
Off-Highway Tractors Off-Highway Tractors	2024 2024	2024Off-Highway Tractors100	100 175	0.090	2.320	3.700	0.110	0.100	0.005	527.441 527.766	0.021	0.004
Dff-Highway Tractors Off-Highway Tractors	2024 2024	2024Off-Highway Tractors175 2024Off-Highway Tractors300	175 300	0.090 0.090	2.320 2.320	2.600 2.600	0.090 0.090	0.080 0.080	0.005 0.005	527.766 526.249	0.021 0.021	0.004 0.004
Off-Highway Tractors	2024	2024Off-Highway Tractors600	600	0.090	2.320	2.600	0.090	0.080	0.005	524.222	0.021	0.004
Off-Highway Tractors	2024	2024Off-Highway Trucks0	750 0	0.090	2.320	2.600	0.090	0.080	0.005	527.635	0.021	0.004
Off-Highway Trucks Off-Highway Trucks	2024 2024	2024Off-Highway Trucks0 2024Off-Highway Trucks25	0 25	2.460 0.220	5.694 4.630	8.624 4.100	0.639 0.280	0.588 0.260	0.005 0.005	586.605 581.963	0.024 0.024	0.005 0.005
Off-Highway Trucks	2024	2024Off-Highway Trucks50	50	0.090	2.740	3.700	0.190	0.180	0.005	530.146	0.022	0.004
Off-Highway Trucks	2024	2024Off-Highway Trucks75	75	0.090	2.740	3.700	0.110	0.100	0.005	529.249	0.021	0.004
Off-Highway Trucks Off-Highway Trucks	2024 2024	2024Off-Highway Trucks100 2024Off-Highway Trucks175	100 175	0.090 0.090	2.320 2.320	3.700 2.600	0.110 0.090	0.100 0.080	0.005 0.005	526.764 525.991	0.021 0.021	0.004 0.004
Off-Highway Trucks	2024	2024Off-Highway Trucks300	300	0.090	2.320	2.600	0.090	0.080	0.005	527.763	0.021	0.004
Off-Highway Trucks	2024	2024Off-Highway Trucks600	600	0.090	2.320	2.600	0.090	0.080	0.005	527.454	0.021	0.004
Off-Highway Trucks	2024	2024Off-Highway Trucks750	750	0.090	2.320	2.600	0.090	0.080	0.005	528.577	0.021	0.004
Other Construction Equipment Other Construction Equipment	2024 2024	2024Other Construction Equipment0 2024Other Construction Equipment25	0 25	0.822 0.220	6.236 4.630	4.875 4.100	0.242 0.280	0.222 0.260	0.013 0.005	848.428 590.090	0.034 0.024	0.007 0.005
Other Construction Equipment	2024	2024Other Construction Equipment50	50	0.090	2.740	3.700	0.190	0.180	0.005	519.506	0.021	0.004
Other Construction Equipment	2024	2024Other Construction Equipment75	75 100	0.090	2.740	3.700	0.110	0.100	0.005	528.454	0.021	0.004
Other Construction Equipment Other Construction Equipment	2024 2024	2024Other Construction Equipment100 2024Other Construction Equipment175	100 175	0.090 0.090	2.320 2.320	3.700 2.600	0.110 0.090	0.100 0.080	0.005 0.005	525.865 528.722	0.021 0.021	0.004 0.004
Other Construction Equipment	2024	2024Other Construction Equipment300	300	0.090	2.320	2.600	0.090	0.080	0.005	528.223	0.021	0.004
Other Construction Equipment	2024	2024Other Construction Equipment600	600	0.090	2.320	2.600	0.090	0.080	0.005	528.615	0.021	0.004
Other Construction Equipment	2024	2024Other Construction Equipment750	750 0	0.090	2.320	2.600	0.090	0.080	0.005	527.547	0.021	0.004
Other General Industrial Equipment Other General Industrial Equipment	2024 2024	2024Other General Industrial Equipment0 2024Other General Industrial Equipment25	0 25	0.820 0.220	6.401 4.630	3.899 4.100	0.242 0.280	0.223 0.260	0.011 0.005	848.062 588.151	0.034 0.024	0.007 0.005
Other General Industrial Equipment	2024	2024Other General Industrial Equipment50	50	0.090	2.740	3.700	0.190	0.180	0.005	527.848	0.024	0.003
Other General Industrial Equipment	2024	2024Other General Industrial Equipment75	75	0.090	2.740	3.700	0.110	0.100	0.005	529.013	0.021	0.004
Other General Industrial Equipment		2024Other General Industrial Equipment 175	100 175	0.090	2.320	3.700	0.110	0.100	0.005	528.382 528.768	0.021	0.004
Other General Industrial Equipment Other General Industrial Equipment	2024	2024Other General Industrial Equipment175	175 300	0.090 0.090	2.320 2.320	2.600 2.600	0.090 0.090	0.080 0.080	0.005 0.005	528.768 528.188	0.021 0.021	0.004 0.004
Other General Industrial Equipment	2024 2024	2024Other General Industrial Fauinment300	600	0.090	2.320	2.600	0.090	0.080	0.005	528.187	0.021	0.004
Other General Industrial Equipment Other Material Handling Equipment	2024	2024Other General Industrial Equipment300 2024Other General Industrial Equipment600 2024Other General Industrial Equipment750		0.090	2.320	2.600	0.090 0.144	0.080 0.133	0.005 0.005	528.190 586.799	0.021 0.024	0.004 0.005

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Source: CalEEMod version 2022, Appendix G - Table G-11 (Tier 3 and Tier 4 Final Generators)

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Equipment Type	Year	Concatenate	НР	ROG	NOX	со	PM10	PM2.5	SO2	CO2	CH4	N2O	
Other Material Handling Equipment Other Material Handling Equipment	2024 2024	2024Other Material Handling Equipment25 2024Other Material Handling Equipment50	25 50	0.220	4.630 2.740	4.100	0.280	0.260	0.005 0.005	590.437	0.024 0.021	0.005 0.004	
Other Material Handling Equipment	2024	2024Other Material Handling Equipment75	50 75	0.090 0.090	2.740 2.740	3.700 3.700	0.190 0.110	0.180 0.100	0.005	526.052 528.694	0.021	0.004	
Other Material Handling Equipment	2024	2024Other Material Handling Equipment100	100	0.090	2.320	3.700	0.110	0.100	0.005	527.725	0.021	0.004	
Other Material Handling Equipment	2024	2024Other Material Handling Equipment175	175	0.090	2.320	2.600	0.090	0.080	0.005	528.003	0.021	0.004	
Other Material Handling Equipment Other Material Handling Equipment	2024 2024	2024Other Material Handling Equipment300 2024Other Material Handling Equipment600	300 600	0.090 0.090	2.320 2.320	2.600 2.600	0.090 0.090	0.080 0.080	0.005 0.005	528.603 527.804	0.021 0.021	0.004 0.004	
Other Material Handling Equipment	2024	2024Other Material Handling Equipment750	750	0.090	2.320	2.600	0.090	0.080	0.005	527.804	0.021	0.004	
Pavers	2024	2024Pavers0	0	0.857	6.552	3.539	0.246	0.226	0.011	859.487	0.035	0.007	
Pavers Pavers	2024 2024	2024Pavers25 2024Pavers50	25 50	0.220 0.090	4.630 2.740	4.100 3.700	0.280 0.190	0.260 0.180	0.005 0.005	587.664 524.123	0.024 0.021	0.005 0.004	
Pavers	2024	2024Pavers75	75	0.090	2.740	3.700	0.190	0.100	0.005	524.123	0.021	0.004	
Pavers	2024	2024Pavers100	100	0.090	2.320	3.700	0.110	0.100	0.005	528.824	0.021	0.004	
Pavers	2024	2024Pavers175	175	0.090	2.320	2.600	0.090	0.080	0.005	528.480	0.021	0.004	
Pavers Pavers	2024 2024	2024Pavers300 2024Pavers600	300 600	0.090 0.090	2.320 2.320	2.600 2.600	0.090 0.090	0.080 0.080	0.005 0.005	527.659 527.836	0.021 0.021	0.004 0.004	
Paving Equipment	2024	2024Paving Equipment0	0	0.849	6.489	3.505	0.242	0.223	0.011	851.192	0.035	0.007	
Paving Equipment	2024	2024Paving Equipment25	25	0.220	4.630	4.100	0.280	0.260	0.005	583.890	0.024	0.005	
Paving Equipment Paving Equipment	2024 2024	2024Paving Equipment50 2024Paving Equipment75	50 75	0.090 0.090	2.740 2.740	3.700 3.700	0.190 0.110	0.180 0.100	0.005 0.005	525.564 528.115	0.021 0.021	0.004 0.004	
Paving Equipment	2024	2024Paving Equipment100	100	0.090	2.320	3.700	0.110	0.100	0.005	527.038	0.021	0.004	
Paving Equipment	2024	2024Paving Equipment175	175	0.090	2.320	2.600	0.090	0.080	0.005	528.616	0.021	0.004	
Paving Equipment	2024	2024Paving Equipment300	300	0.090	2.320	2.600	0.090	0.080	0.005	527.215	0.021	0.004	
Paving Equipment Paving Equipment	2024 2024	2024Paving Equipment600 2024Paving Equipment750	600 750	0.090 0.090	2.320 2.320	2.600 2.600	0.090 0.090	0.080 0.080	0.005 0.005	528.802 528.095	0.021 0.021	0.004 0.004	
Plate Compactors	2024	2024Plate Compactors0	0	0.547	4.143	3.470	0.162	0.149	0.009	568.353	0.023	0.005	
Pressure Washers	2024	2024Pressure Washers0	0	0.534	4.414	3.275	0.184	0.169	0.009	578.474	0.023	0.005	
Pressure Washers Pumps	2024 2024	2024Pressure Washers25 2024Pumps0	25 0	0.220 0.090	4.630 2.750	4.100 3.012	0.280 0.010	0.260 0.010	0.008 0.008	582.246 568.303	0.024 0.023	0.005 0.005	
Pumps	2024	2024Pumps25	25	0.090	2.750	4.100	0.010	0.010	0.008	568.309	0.023	0.005	
Rollers	2024	2024Rollers0	0	0.090	6.317	4.394	0.242	0.223	0.012	847.965	0.034	0.007	
Rollers Rollers	2024 2024	2024Rollers25 2024Rollers50	25 50	0.090 0.090	4.630 2.740	4.100 3.700	0.280 0.190	0.260 0.180	0.005 0.005	586.798 527.793	0.024 0.021	0.005 0.004	
Rollers	2024	2024Rollers75	75	0.090	2.740	3.700	0.190	0.100	0.005	527.795	0.021	0.004	
Rollers	2024	2024Rollers100	100	0.090	2.320	3.700	0.110	0.100	0.005	527.451	0.021	0.004	
Rollers	2024	2024Rollers175	175	0.090	2.320	2.600	0.090	0.080	0.005	528.113	0.021	0.004	
Rollers Rough Terrain Forklifts	2024 2024	2024Rollers300 2024Rough Terrain Forklifts0	300 0	0.090 0.090	2.320 5.022	2.600 4.109	0.090 0.285	0.080 0.262	0.005 0.005	530.541 587.236	0.022 0.024	0.004 0.005	
Rough Terrain Forklifts	2024	2024Rough Terrain Forklifts25	25	0.090	4.630	4.100	0.280	0.260	0.005	586.945	0.024	0.005	
Rough Terrain Forklifts	2024	2024Rough Terrain Forklifts50	50	0.090	2.740	3.700	0.190	0.180	0.005	562.208	0.023	0.005	
Rough Terrain Forklifts Rough Terrain Forklifts	2024 2024	2024Rough Terrain Forklifts75 2024Rough Terrain Forklifts100	75 100	0.090 0.090	2.740 2.320	3.700 3.700	0.110 0.110	0.100 0.100	0.005 0.005	528.511 527.958	0.021 0.021	0.004 0.004	
Rough Terrain Forklifts	2024	2024Rough Terrain Forklifts175	175	0.090	2.320	2.600	0.090	0.080	0.005	528.155	0.021	0.004	
Rough Terrain Forklifts	2024	2024Rough Terrain Forklifts300	300	0.090	2.320	2.600	0.090	0.080	0.005	527.513	0.021	0.004	
Rough Terrain Forklifts Rubber Tired Dozers	2024 2024	2024Rough Terrain Forklifts600 2024Rubber Tired Dozers25	600 25	0.090 0.090	2.320 4.630	2.600 4.100	0.090 0.280	0.080 0.260	0.005 0.005	527.403 586.897	0.021 0.024	0.004 0.005	
Rubber Tired Dozers	2024	2024Rubber Tired Dozers50	50	0.090	2.740	3.700	0.280	0.280	0.005	528.795	0.024	0.003	
Rubber Tired Dozers	2024	2024Rubber Tired Dozers75	75	0.090	2.740	3.700	0.110	0.100	0.005	531.865	0.022	0.004	
Rubber Tired Dozers	2024	2024Rubber Tired Dozers100	100	0.090	2.320	3.700	0.110	0.100	0.005	528.043	0.021	0.004	
Rubber Tired Dozers Rubber Tired Dozers	2024 2024	2024Rubber Tired Dozers175 2024Rubber Tired Dozers300	175 300	0.090 0.090	2.320 2.320	2.600 2.600	0.090 0.090	0.080 0.080	0.005 0.005	528.759 532.203	0.021 0.022	0.004 0.004	
Rubber Tired Dozers	2024	2024Rubber Tired Dozers600	600	0.090	2.320	2.600	0.090	0.080	0.005	527.876	0.021	0.004	
Rubber Tired Loaders	2024	2024Rubber Tired Loaders0	0	0.090	6.490	3.505	0.243	0.223	0.011	851.331	0.035	0.007	
Rubber Tired Loaders Rubber Tired Loaders	2024 2024	2024Rubber Tired Loaders25 2024Rubber Tired Loaders50	25 50	0.090 0.090	4.630 2.740	4.100 3.700	0.280 0.190	0.260 0.180	0.005 0.005	589.803 521.322	0.024 0.021	0.005 0.004	
Rubber Tired Loaders	2024	2024Rubber Tired Loaders75	75	0.090	2.740	3.700	0.110	0.100	0.005	523.314	0.021	0.004	
Rubber Tired Loaders	2024	2024Rubber Tired Loaders100	100	0.090	2.320	3.700	0.110	0.100	0.005	526.332	0.021	0.004	
Rubber Tired Loaders Rubber Tired Loaders	2024 2024	2024Rubber Tired Loaders175 2024Rubber Tired Loaders300	175 300	0.090 0.090	2.320 2.320	2.600 2.600	0.090 0.090	0.080 0.080	0.005 0.005	526.680 525.984	0.021 0.021	0.004 0.004	
Rubber Tired Loaders	2024	2024Rubber Tired Loaders600	600	0.090	2.320	2.600	0.090	0.080	0.005	526.145	0.021	0.004	
Rubber Tired Loaders	2024	2024Rubber Tired Loaders750	750	0.090	2.320	2.600	0.090	0.080	0.005	528.592	0.021	0.004	
Scrapers	2024	2024Scrapers0	0	0.090	2.892	3.416	0.011	0.010	0.005	586.963	0.024	0.005	
Scrapers Scrapers	2024 2024	2024Scrapers25 2024Scrapers50	25 50	0.090 0.090	4.630 2.740	4.100 3.700	0.280 0.190	0.260 0.180	0.005 0.005	577.150 531.943	0.023 0.022	0.005 0.004	
Scrapers	2024	2024Scrapers75	75	0.090	2.740	3.700	0.110	0.100	0.005	530.381	0.022	0.004	
Scrapers	2024	2024Scrapers100	100	0.090	2.320	3.700	0.110	0.100	0.005	531.820	0.022	0.004	
Scrapers Scrapers	2024 2024	2024Scrapers175 2024Scrapers300	175 300	0.090 0.090	2.320 2.320	2.600 2.600	0.090 0.090	0.080 0.080	0.005 0.005	527.327 528.968	0.021 0.021	0.004 0.004	
Scrapers	2024	2024Scrapers600	600	0.090	2.320	2.600	0.090	0.080	0.005	529.775	0.021	0.004	
Scrapers	2024	2024Scrapers750	750	0.090	2.320	2.600	0.090	0.080	0.005	527.722	0.021	0.004	
Signal Boards Signal Boards	2024 2024	2024Signal Boards0 2024Signal Boards25	0 25	0.090 0.090	4.143 4.630	3.470 4.100	0.162 0.280	0.149 0.260	0.009 0.007	568.303 561.957	0.023 0.023	0.005 0.005	
Skid Steer Loaders	2024	2024Sigital Boards25 2024Skid Steer Loaders0	0	0.090	6.496	3.494	0.250	0.230	0.007	848.207	0.023	0.003	
Skid Steer Loaders	2024	2024Skid Steer Loaders25	25	0.090	4.630	4.100	0.280	0.260	0.005	588.969	0.024	0.005	
Skid Steer Loaders	2024	2024Skid Steer Loaders50	50	0.090	2.740	3.700	0.190	0.180	0.005	528.170	0.021	0.004	
Skid Steer Loaders Skid Steer Loaders	2024 2024	2024Skid Steer Loaders75 2024Skid Steer Loaders100	75 100	0.090 0.090	2.740 2.320	3.700 3.700	0.110 0.110	0.100 0.100	0.005 0.005	523.523 526.346	0.021 0.021	0.004 0.004	
Skid Steer Loaders	2024	2024Skid Steer Loaders175	175	0.090	2.320	2.600	0.090	0.080	0.005	528.250	0.021	0.004	
Skid Steer Loaders	2024	2024Skid Steer Loaders300	300	0.090	2.320	2.600	0.090	0.080	0.005	528.537	0.021	0.004	
Skid Steer Loaders Skid Steer Loaders	2024 2024	2024Skid Steer Loaders600 2024Skid Steer Loaders750	600 750	0.090 0.090	2.320 2.320	2.600 2.600	0.090 0.090	0.080 0.080	0.005 0.005	528.537 528.537	0.021 0.021	0.004 0.004	
Surfacing Equipment	2024	2024Skid Steel Edaders750 2024Surfacing Equipment25	25	0.090	4.630	4.100	0.030	0.260	0.005	591.938	0.021	0.004	
Surfacing Equipment	2024	2024Surfacing Equipment50	50	0.090	2.740	3.700	0.190	0.180	0.005	529.534	0.021	0.004	
Surfacing Equipment	2024	2024Surfacing Equipment75	75 100	0.090	2.740	3.700	0.110	0.100	0.005	531.151	0.022	0.004	
Surfacing Equipment Surfacing Equipment	2024 2024	2024Surfacing Equipment100 2024Surfacing Equipment175	100 175	0.090 0.090	2.320 2.320	3.700 2.600	0.110 0.090	0.100 0.080	0.005 0.005	528.304 529.139	0.021 0.021	0.004 0.004	
Surfacing Equipment	2024	2024Surfacing Equipment300	300	0.090	2.320	2.600	0.090	0.080	0.005	529.139	0.021	0.004	
Surfacing Equipment	2024	2024Surfacing Equipment600	600	0.090	2.320	2.600	0.090	0.080	0.005	527.332	0.021	0.004	
Surfacing Equipment	2024 2024	2024Surfacing Equipment750	750 0	0.090	2.320 6.371	2.600	0.090	0.080	0.005	527.931 849 744	0.021	0.004	
Sweepers/Scrubbers Sweepers/Scrubbers	2024 2024	2024Sweepers/Scrubbers0 2024Sweepers/Scrubbers25	0 25	0.090 0.090	6.371 4.630	4.138 4.100	0.242 0.280	0.223 0.260	0.012 0.005	849.744 587.008	0.034 0.024	0.007 0.005	
Sweepers/Scrubbers	2024	2024Sweepers/Scrubbers50	50	0.090	2.740	3.700	0.190	0.180	0.005	524.229	0.024	0.003	
Sweepers/Scrubbers	2024	2024Sweepers/Scrubbers75	75 100	0.090	2.740	3.700	0.110	0.100	0.005	528.146	0.021	0.004	
Sweepers/Scrubbers Sweepers/Scrubbers	2024 2024	2024Sweepers/Scrubbers100 2024Sweepers/Scrubbers175	100 175	0.090 0.090	2.320 2.320	3.700 2.600	0.110 0.090	0.100 0.080	0.005 0.005	528.031 528.031	0.021 0.021	0.004 0.004	
Sweepers/Scrubbers	2024	2024Sweepers/Scrubbers300	300	0.090	2.320	2.600	0.090	0.080	0.005	528.031	0.021	0.004	
Sweepers/Scrubbers	2024	2024Sweepers/Scrubbers600	600	0.090	2.320	2.600	0.090	0.080	0.005	528.031	0.021	0.004	
Sweepers/Scrubbers	2024	2024Sweepers/Scrubbers750	750	0.090	2.320	2.600	0.090	0.080	0.005	528.031	0.021	0.004	

Source: CalEEMod version 2022, Appendix G - Table G-11 (Tier 3 and Tier 4 Final Generators)

		1		2 3	4	5	6	7	8	9	10	11
Equipment Type	Year	Concatenate	HP	ROG	NOX	СО	PM10	PM2.5	SO2	CO2	CH4	N2O
Tractors/Loaders/Backhoes	2024	2024Tractors/Loaders/Backhoes0	0	0.090	6.467	3.493	0.242	0.222	0.011	848.372	0.034	0.007
Tractors/Loaders/Backhoes	2024	2024Tractors/Loaders/Backhoes25	25	0.090	4.630	4.100	0.280	0.260	0.005	580.944	0.024	0.005
Tractors/Loaders/Backhoes	2024	2024Tractors/Loaders/Backhoes50	50	0.090	2.740	3.700	0.190	0.180	0.005	528.215	0.021	0.004
Tractors/Loaders/Backhoes	2024	2024Tractors/Loaders/Backhoes75	75	0.090	2.740	3.700	0.110	0.100	0.005	529.933	0.021	0.004
Tractors/Loaders/Backhoes	2024	2024Tractors/Loaders/Backhoes100	100	0.090	2.320	3.700	0.110	0.100	0.005	526.286	0.021	0.004
Tractors/Loaders/Backhoes	2024	2024Tractors/Loaders/Backhoes175	175	0.090	2.320	2.600	0.090	0.080	0.005	526.144	0.021	0.004
Tractors/Loaders/Backhoes	2024	2024Tractors/Loaders/Backhoes300	300	0.090	2.320	2.600	0.090	0.080	0.005	525.872	0.021	0.004
Tractors/Loaders/Backhoes	2024	2024Tractors/Loaders/Backhoes600	600	0.090	2.320	2.600	0.090	0.080	0.005	518.144	0.021	0.004
Tractors/Loaders/Backhoes	2024	2024Tractors/Loaders/Backhoes750	750	0.090	2.320	2.600	0.090	0.080	0.005	527.874	0.021	0.004
Trenchers	2024	2024Trenchers0	0	0.090	6.415	3.826	0.242	0.222	0.011	848.779	0.034	0.007
Trenchers	2024	2024Trenchers25	25	0.090	4.630	4.100	0.280	0.260	0.005	587.904	0.024	0.005
Trenchers	2024	2024Trenchers50	50	0.090	2.740	3.700	0.190	0.180	0.005	527.464	0.021	0.004
Trenchers	2024	2024Trenchers75	75	0.090	2.740	3.700	0.110	0.100	0.005	528.932	0.021	0.004
Trenchers	2024	2024Trenchers100	100	0.090	2.320	3.700	0.110	0.100	0.005	526.797	0.021	0.004
Trenchers	2024	2024Trenchers175	175	0.090	2.320	2.600	0.090	0.080	0.005	529.435	0.021	0.004
Trenchers	2024	2024Trenchers300	300	0.090	2.320	2.600	0.090	0.080	0.005	530.208	0.022	0.004
Trenchers	2024	2024Trenchers600	600	0.090	2.320	2.600	0.090	0.080	0.005	528.334	0.021	0.004
Trenchers	2024	2024Trenchers750	750	0.090	2.320	2.600	0.090	0.080	0.005	528.023	0.021	0.004
Welders	2024	2024Welders0	0	0.090	4.384	2.817	0.184	0.169	0.008	568.343	0.023	0.005
Welders	2024	2024Welders25	25	0.090	4.630	4.100	0.280	0.260	0.007	568.290	0.023	0.005

CalEEMod Construction Equipment Defaults

Source: CalEEMod version 2022, Table G-12, Appendix G (Diesel Only)

OFFROAD Equipment Type	Horsepower	Load Factor
Aerial Lifts	46	0.31
Air Compressors	37	0.48
Bore/Drill Rigs	83	0.50
Cement and Mortar Mixers	10	0.56
Concrete/Industrial Saws	33	0.73
Cranes	367	0.29
Crawler Tractors	87	0.43
Dumpers/Tenders	16	0.38
Excavators	36	0.38
Forklifts	82	0.20
Generator Sets	14	0.74
Graders	148	0.41
Off-Highway Tractors	38	0.44
Off-Highway Trucks	376	0.38
Other Construction Equipment	82	0.42
Other General Industrial Equipment	35	0.34
Other Material Handling Equipment	93	0.40
Pavers	81	0.42
Paving Equipment	89	0.36
Plate Compactors	8	0.43
Pressure Washers	14	0.30
Pumps	11	0.74
Rollers	36	0.38
Rough Terrain Forklifts	96	0.40
Rubber Tired Dozers	367	0.40
Rubber Tired Loaders	150	0.36
Scrapers	423	0.48
Signal Boards	6	0.82
Skid Steer Loaders	71	0.37
Surfacing Equipment	399	0.30
Sweepers/Scrubbers	36	0.46
Tractors/Loaders/Backhoes	84	0.37
Trenchers	40	0.50
Welders	46	0.45

Onroad Emission Factors- Mitigated and Controlled Fugitive Dust

Source: EMFAC2021. Offsite emission factors for aggregate speeds. Onsite for speeds shown.

				Running (RUNEX, PMTW, PMBW) grams per mile								Process (IDLEX, STREX, TOTEX, DIURN, HTSK, RUNLS, RESTL) grams per trip														
Year	Air Basin	VehType	Speed	Lookup	ROG	NOx	СО	PM10 Ex	PM10 D	PM2.5 Ex	PM2.5 D	SO2	CO2	CH4	N2O	ROG	NOx	со	PM10 Ex	PM10 D	PM2.5 Ex	PM2.5 D	SO2	CO2	CH4	N2O
2023	MDAB	T6	Offsite	2023T6Offsite	0.01	0.89	0.05	0.01	0.22	0.01	0.04	0.01	1058	0.00	0.17	0.23	12.81	7.57	0.02	0.00	0.02	0.00	0.02	2262	0.01	0.36
2024	MDAB	T6	Offsite	2024T6Offsite	0.01	0.91	0.05	0.01	0.22	0.01	0.04	0.01	1055	0.00	0.17	0.22	12.76	7.53	0.02	0.00	0.02	0.00	0.02	2261	0.01	0.36
2023	MDAB	T7	Offsite	2023T7Offsite	0.02	1.39	0.07	0.02	0.27	0.02	0.06	0.02	1611	0.00	0.25	1.91	25.41	26.72	0.02	0.00	0.02	0.00	0.04	4662	0.09	0.73
2024	MDAB	T7	Offsite	2024T7Offsite	0.02	1.37	0.07	0.02	0.27	0.02	0.06	0.02	1608	0.00	0.25	1.90	25.43	26.80	0.02	0.00	0.02	0.00	0.04	4636	0.09	0.73
2023	MDAB	LDA-LDT	Offsite	2023LDA-LDTOffsite	0.01	0.07	0.92	0.00	0.18	0.00	0.03	0.00	304	0.00	0.01	2.67	0.31	3.78	0.00	0.00	0.00	0.00	0.00	77	0.08	0.04
2024	MDAB	LDA-LDT	Offsite	2024LDA-LDTOffsite	0.01	0.06	0.85	0.00	0.18	0.00	0.03	0.00	297	0.00	0.01	2.54	0.29	3.53	0.00	0.00	0.00	0.00	0.00	75	0.08	0.03
2023	MDAB	T6Onsite	5	2023T6Onsite5	0.10	4.04	0.59	0.01	88.56	0.01	8.87	0.01	2425	0.00	0.38	0.23	12.81	7.57	0.02	0.00	0.02	0.00	0.02	2262	0.01	0.36
2023	MDAB	T6Onsite	10	2023T6Onsite10	0.06	3.22	0.39	0.01	88.56	0.01	8.87	0.01	2015	0.00	0.32	0.23	12.81	7.57	0.02	0.00	0.02	0.00	0.02	2262	0.01	0.36
2023	MDAB	T6Onsite	15	2023T6Onsite15	0.03	2.35	0.22	0.01	88.56	0.01	8.87	0.01	1586	0.00	0.25	0.23	12.81	7.57	0.02	0.00	0.02	0.00	0.02	2262	0.01	0.36
2024	MDAB	T6Onsite	5	2024T6Onsite5	0.10	4.13	0.61	0.01	88.56	0.01	8.87	0.01	2421	0.00	0.38	0.22	12.76	7.53	0.02	0.00	0.02	0.00	0.02	2261	0.01	0.36
2024	MDAB	T6Onsite	10	2024T6Onsite10	0.06	3.24	0.39	0.01	88.56	0.01	8.87	0.01	2006	0.00	0.32	0.22	12.76	7.53	0.02	0.00	0.02	0.00	0.02	2261	0.01	0.36
2024	MDAB	T6Onsite	15	2024T6Onsite15	0.03	2.37	0.22	0.01	88.56	0.00	8.87	0.00	1579	0.00	0.25	0.22	12.76	7.53	0.02	0.00	0.02	0.00	0.02	2261	0.01	0.36
2023	MDAB	T6Onsite	5	2023T6Onsite5Industrial	0.10	4.04	0.59	0.01	88.56	0.01	25.51	0.01	2425	0.00	0.38	0.23	12.81	7.57	0.02	0.00	0.02	0.00	0.02	2262	0.01	0.36
2023	MDAB	T6Onsite	10	2023T6Onsite10Industrial	0.06	3.22	0.39	0.01	88.56	0.01	25.51	0.01	2015	0.00	0.32	0.23	12.81	7.57	0.02	0.00	0.02	0.00	0.02	2262	0.01	0.36
2023	MDAB	T6Onsite	15	2023T6Onsite15Industrial	0.03	2.35	0.22	0.01	88.56	0.01	25.51	0.01	1586	0.00	0.25	0.23	12.81	7.57	0.02	0.00	0.02	0.00	0.02	2262	0.01	0.36
2024	MDAB	T6Onsite	5	2024T6Onsite5Industrial	0.10	4.13	0.61	0.01	88.56	0.01	25.51	0.01	2421	0.00	0.38	0.22	12.76	7.53	0.02	0.00	0.02	0.00	0.02	2261	0.01	0.36
2024	MDAB	T6Onsite	10	2024T6Onsite10Industrial	0.06	3.24	0.39	0.01	88.56	0.01	25.51	0.01	2006	0.00	0.32	0.22	12.76	7.53	0.02	0.00	0.02	0.00	0.02	2261	0.01	0.36
2024	MDAB	T6Onsite	15	2024T6Onsite15Industrial	0.03	2.37	0.22	0.01	88.56	0.00	25.51	0.00	1579	0.00	0.25	0.22	12.76	7.53	0.02	0.00	0.02	0.00	0.02	2261	0.01	0.36
2023	MDAB	T7Onsite	5	2023T7Onsite5	0.15	8.17	1.32	0.01	88.64	0.01	8.90	0.01	3528	0.01	0.56	1.91	25.41	26.72	0.02	0.00	0.02	0.00	0.04	4662	0.09	0.73
2023	MDAB	T7Onsite	10	2023T7Onsite10	0.09	6.27	0.85	0.01	88.64	0.01	8.90	0.01	3020	0.00	0.48	1.91	25.41	26.72	0.02	0.00	0.02	0.00	0.04	4662	0.09	0.73
2023	MDAB	T7Onsite	15	2023T7Onsite15	0.05	4.33	0.47	0.01	88.63	0.01	8.90	0.01	2450	0.00	0.39	1.91	25.41	26.72	0.02	0.00	0.02	0.00	0.04	4662	0.09	0.73
2024	MDAB	T7Onsite	5	2024T7Onsite5	0.14	8.23	1.28	0.01	88.64	0.01	8.90	0.01	3472	0.01	0.55	1.90	25.43	26.80	0.02	0.00	0.02	0.00	0.04	4636	0.09	0.73
2024	MDAB	T7Onsite	10	2024T7Onsite10	0.09	6.38	0.84	0.01	88.64	0.01	8.90	0.01	2996	0.00	0.47	1.90	25.43	26.80	0.02	0.00	0.02	0.00	0.04	4636	0.09	0.73
2024	MDAB	T7Onsite	15	2024T7Onsite15	0.05	4.34	0.46	0.01	88.63	0.01	8.90	0.01	2424	0.00	0.38	1.90	25.43	26.80	0.02	0.00	0.02	0.00	0.04	4636	0.09	0.73
2023	MDAB	LDA-LDTOnsite	e 5	2023LDA-LDTOnsite5	0.02	0.03	0.43	0.00	88.50	0.00	8.85	0.00	160	0.01	0.00	2.67	0.31	3.78	0.00	0.00	0.00	0.00	0.00	77	0.08	0.04
2023	MDAB	LDA-LDTOnsite	e 10	2023LDA-LDTOnsite10	0.03	0.05	0.76	0.00	88.50	0.00	8.85	0.00	245	0.01	0.00	2.67	0.31	3.78	0.00	0.00	0.00	0.00	0.00	77	0.08	0.04
2023	MDAB	LDA-LDTOnsite	e 15	2023LDA-LDTOnsite15	0.01	0.03	0.45	0.00	88.50	0.00	8.85	0.00	135	0.00	0.00	2.67	0.31	3.78	0.00	0.00	0.00	0.00	0.00	77	0.08	0.04
2024	MDAB	LDA-LDTOnsite	e 5	2024LDA-LDTOnsite5	0.02	0.02	0.34	0.00	88.50	0.00	8.85	0.00	131	0.00	0.00	2.54	0.29	3.53	0.00	0.00	0.00	0.00	0.00	75	0.08	0.03
2024	MDAB	LDA-LDTOnsite	e 10	2024LDA-LDTOnsite10	0.02	0.04	0.65	0.00	88.50	0.00	8.85	0.00	221	0.01	0.00	2.54	0.29	3.53	0.00	0.00	0.00	0.00	0.00	75	0.08	0.03
2024	MDAB	LDA-LDTOnsite	e 15	2024LDA-LDTOnsite15	0.01	0.03	0.51	0.00	88.50	0.00	8.85	0.00	158	0.00	0.00	2.54	0.29	3.53	0.00	0.00	0.00	0.00	0.00	75	0.08	0.03

CalEEMod Material Fugitive Dust Emission Factors- Mitigated and Controlled Fugitive Dust

Calculation Details in CalEEMod Users Guide, Appendix A

WRAP Handbook, Table 3-7, 2-hour

Watering for all but demo 74% grading watering interv

watering interval WRAP Fugitive Dust Handbook, Fugitive

Dust Control Measures Applicable for the

Watering for demo 84% demo WRAP Region

		-
Paving ROG EF	2.6200 lbs/acre	CalEEMod (no mitigation)
Grading PM10 EF	0.4136 lbs/acre	CalEEMod (with watering)
Grading PM2.5 EF	0.0447 lbs/acre	CalEEMod (with watering)
Bulldozing PM10 EF	0.2936 lbs/hr	CalEEMod (with watering)
Bulldozing PM2.5 EF	0.1614 lbs/hr	CalEEMod (with watering)
Truck loading PM10 EF	0.000182 lb/ton	CalEEMod (with watering)
Truck loading PM2.5 EF	0.000028 lb/ton	CalEEMod (with watering)
Demo PM10 EF	0.0038 lb/ton	CalEEMod (with watering)
Demo PM2.5 EF	0.0006 lb/ton	CalEEMod (with watering)

Water and Wastewater Electricity Intensity (kWhr/MG) - Table 9.2 CalEEMod Appendix D

District	Supply Water	Treat Water	Distribute Water	Total Outdoor Use
Kern County APCD	9727	111	1272	11110

Туре	Phase	PM10	PM2.5	PM10 D	PM2.5 D
	Phase1	0.00	0.00	0.00	0.00
	Phase2	0.00	0.00	0.00	0.00
	Phase3	0.00	0.00	0.00	0.00
	Phase4	0.00	0.00	0.00	0.00
	Phase5	0.00	0.00	0.00	0.00
Offsite	Phase6	0.00	0.00	0.00	0.00
	Phase7	0.00	0.00	0.00	0.00
	Phase8	0.00	0.00	0.00	0.00
	Phase9	0.00	0.00	0.00	0.00
	Phase10	0.00	0.00	0.00	0.00
	Phase11	0.00	0.00	0.00	0.00
	Phase1	0.00	0.00	0.00	0.00
	Phase2	0.00	0.00	0.00	0.00
	Phase3	0.00	0.00	0.00	0.00
	Phase4	0.00	0.00	0.00	0.00
	Phase5	0.00	0.00	3.06	0.88
Onsite	Phase6	0.00	0.00	0.00	0.00
	Phase7	0.00	0.00	0.00	0.00
	Phase8	0.00	0.00	0.00	0.00
	Phase9	0.00	0.00	0.00	0.00
	Phase10	0.00	0.00	0.00	0.00
	Phase11	0.00	0.00	0.00	0.00
	Phase1	0.04	0.03	0.00	0.00
	Phase2	0.20	0.18	0.00	0.00
	Phase3	0.08	0.07	0.00	0.00
	Phase4	0.03	0.02	0.00	0.00
	Phase5	0.44	0.40	0.00	0.00
Offroad	Phase6	0.06	0.05	0.00	0.00
	Phase7	0.07	0.06	0.00	0.00
	Phase8	#N/A	#N/A	#N/A	#N/A
	Phase9	#N/A	#N/A	#N/A	#N/A
	Phase10	#N/A	#N/A	#N/A	#N/A
	Phase11	#N/A	#N/A	#N/A	#N/A
	Phase1	0.00	0.00	0.00	0.00
	Phase2	0.00	0.00	0.00	0.00
	Phase3	0.00	0.00	0.00	0.00
	Phase4	0.00	0.00	0.00	0.00
	Phase5	0.00	0.00	15.38	1.54
Employee Onsite	Phase6	0.00	0.00	0.00	0.00
	Phase7	0.00	0.00	0.00	0.00
	Phase8	0.00	0.00	0.00	0.00
	Phase9	0.00	0.00	0.00	0.00
	Phase10	0.00	0.00	0.00	0.00
	Phase11	0.00	0.00	0.00	0.00
	Phase1	0.00	0.00	0.00	0.00
	Phase2	0.00	0.00	0.00	0.00

	Phase3	0.00	0.00	0.00	0.00
	Phase4	0.00	0.00	0.00	0.00
	Phase5	0.01	0.01	0.79	0.13
Employee Offsite	Phase6	0.00	0.00	0.00	0.00
	Phase7	0.00	0.00	0.00	0.00
	Phase8	0.00	0.00	0.00	0.00
	Phase9	0.00	0.00	0.00	0.00
	Phase10	0.00	0.00	0.00	0.00
	Phase11	0.00	0.00	0.00	0.00
	Phase1	0.00	0.00	0.07	0.04
	Phase2	0.00	0.00	0.76	0.36
	Phase3	0.00	0.00	0.21	0.12
	Phase4	0.00	0.00	0.00	0.00
	Phase5	0.00	0.00	0.00	0.00
Grade/Pave/Demo	Phase6	0.00	0.00	0.00	0.00
	Phase7	0.00	0.00	0.00	0.00
	Phase8	#N/A	#N/A	#N/A	#N/A
	Phase9	#N/A	#N/A	#N/A	#N/A
	Phase10	#N/A	#N/A	#N/A	#N/A
	Phase11	#N/A	#N/A	#N/A	#N/A
	Phase1	#REF!	#REF!	#REF!	#REF!
	Phase2	#REF!	#REF!	#REF!	#REF!
	Phase3	#REF!	#REF!	#REF!	#REF!
	Phase4	#REF!	#REF!	#REF!	#REF!
	Phase5	#REF!	#REF!	#REF!	#REF!
Concrete Batching	Phase6	#REF!	#REF!	#REF!	#REF!
	Phase7	#REF!	#REF!	#REF!	#REF!
	Phase8	#REF!	#REF!	#REF!	#REF!
	Phase9	#REF!	#REF!	#REF!	#REF!
	Phase10	#REF!	#REF!	#REF!	#REF!
	Phase11	#REF!	#REF!	#REF!	#REF!
		13	14	15	16

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Summary of Total Emissions - Unmitigated and Uncontrolled Fugitive Dust

By Year (not including carbon loss)

					To	ns per year						Metric ton	s per year	
Year	ROG	NOX	CO	PM10 E	PM10 D	PM 10 T	PM2.5 E	PM2.5 D	PM2.5 T	SO2	CO2	CH4	N2O	CO2e
2024	6	53	47	2	63	65	2	8	11	0	15,066	0.3	1.3	15,472
Total	6	53	47	2	63	65	2	8	11	0	15,066	0.3	1.3	15,472

By Phase (including carbon loss)

						Į.	ons per year						Metric ton	is per year	
Phase	Phase name	ROG	NOX	CO	PM10 E	PM10 D	PM 10 T	PM2.5 E	PM2.5 D	PM2.5 T	SO2	CO2	CH4	N2O	CO2e
Phase1	Move On	0	1	1	0	0	0	0	0	0	0	218	0.0	0.0	219
Phase2	Site Preparation & Grading	1	6	5	0	2	2	0	1	1	0	1,000	0.0	0.0	1,003
Phase3	New Access Road Construction	0	2	2	0	1	1	0	0	0	0	390	0.0	0.0	392
Phase4	Internal Roads Construction	0	1	1	0	0	0	0	0	0	0	126	0.0	0.0	126
Phase5	Solar Array Structural, Underground & Panel Installation, Battery Storage	5	39	35	2	60	62	2	7	9	0	12,692	0.2	1.3	13,091
Phase6	Electrical Substation & Microwave Tower Construction	0	1	2	0	0	0	0	0	0	0	260	0.0	0.0	261
Phase7	Generation Tie Line Construction	0	2	2	0	0	0	0	0	0	0	402	0.0	0.0	403
Tree Removal/ C	CO2 loss	•										606			606
Total Net Emission	ons	6	53	47	2	63	65	2	8	11	0	15,693	0.3	1.3	16,100
											Amortized (35-year)	448	0.0	0.0	460

Summary of Total Fuel Consumption

Year	Gallons (diesel/gasoline)	
2024		1,479,352
Total		1,479,352

Summary of Total kWh Usage

Year	kWh		
2024		724,041	
Total		724,041	

167

Summary of Construction Assumptions

665

Total Acres:

Schedule							Total Vehicles Per day		Į.	verage o	ne-way tı	rip length
Phase No.	Activity	Duration (month)	Number of Days	Start Date	End Date	Water Trucks ¹	Vendor/Haul Trucks	Employees	Water Trips	6	miles	(1 of those miles unpaved)
Phase1	Move On	1	21	1/1/2024	1/30/2024				Vendor Trips	55	miles	(0.25 of those miles unpaved)
Phase2	Site Preparation & Grading	4	88	1/1/2024	5/1/2024				Worker Trips	26.5	miles	(1 of those miles unpaved)
Phase3	New Access Road Construction	2	45	1/1/2024	3/1/2024							
Phase4	Internal Roads Construction	2	45	1/1/2024	3/1/2024							
Phase5	Solar Array Structural, Underground & Panel Installation, Battery Storage	12	261	1/1/2024	12/31/2024	12	155	302				
Phase6	Electrical Substation & Microwave Tower Construction	3	65	1/1/2024	4/1/2024							
Phase7	Generation Tie Line Construction	4	86	1/1/2024	4/30/2024							
1	2	3	4	5	6	7	8	9	_			
Grading	Phase 2, Site Preparation & Grading								_			

Phase 5, Solar Array Structural, Underground & Panel Installation, Battery Storage Water Use Provided in WSA preprared for Project (ICF June 2021) Acre-feet: 200 Gallons:

Phase 2, Site Preparation & Grading Demolition 7079 Total SF 88 Days of Demo

Days of Demo	88			
SF per day	80			
Equipment				
Phase No.	Type of Equipment	Number of Pieces	Hours of Operation	НР
	Forklifts	6	8	89
	Generator Sets	6	8	84
	Graders	6	8	187
	Carts/ATVs	8	8	88
Phase 1: Move On	Rollers	3	8	80
	Rubber Tired Dozers	3	8	247
	Scrapers	3	8	367
	Tractors/Loaders/Backhoes	6	8	97
	Trenchers	3	8	78
	Graders	6	8	187
	Other Construction Equipment	4	8	172
-1	Carts/ATVs	8	8	88
Phase 2: Site Preparation	Rollers	6	8	80
& Grading	Rubber Tired Dozers	6	8	247
	Scrapers	4	8	367
	Tractors/Loaders/Backhoes	6	8	97
	Graders	6	8	187
	Other Construction Equipment	3	8	172
Phase 3: New Access	Carts/ATVs	3	8	88
Road Construction	Rollers	6	8	80
	Rubber Tired Dozers	4	8	247
	Scrapers	4	8	367
	Graders	4	8	187
Phase 4: Internal Roads		3	8	88
Construction	Rollers	4	8	80
Construction	Tractors/Loaders/Backhoes	4	8	97
	Forklifts	8	8	89
	Generator Sets	15	8	84
Phase 5: Solar Array	Carts/ATVs	12	8	88
Structural, Underground		3	8	80
& Panel Installation,	Skid Steer Loaders	12	8	65
Battery Storage	Post Drivers	15	8	65
battery Storage	Tractors/Loaders/Backhoes	3	8	97
	Trenchers	7	8	78
	Aerial Lifts	4	8	63
	Cranes	3	8	231
Phase 6: Electrical	Forklifts	3	8	89
Substation & Microwave	Carts/ATVs	3	8	88
Tower Construction	Tractors/Loaders/Backhoes	3 7	8	97
	Trenchers	7	8	78
	Aerial Lifts	4	<u> </u>	63
	Cranes	4		
		4	8	231
Phase 7: Generation Tie	Crawler Tractors	3	8	212
Line Construction	Forklifts Congretor Sets	3	8	89
	Generator Sets	3	8	84
	Carts/ATVs	3	8	88
	Tractors/Loaders/Backhoes	4	8	97

Appendix B: Air Quality and Greenhouse Gas Mass Emission Modeling

Offroad Calculations - Unmitigated and Uncontrolled Fugitive Dust

								3	4	5 Dour de	6 per day	7	8			Tons	Or 1/02=			9		11 is per yea		C-1
ode	Equip	#/day	hrs/day CMOD	HP Bin	HP	LF Fuel	Concat	ROG	NOX		· · · ·		1 SO2	ROG	NOX	Tons po	PM10	PM2.5	SO2	CO2	CH4	N2O	cO2e	Gal per year
nase1	Forklifts	6	8 Forklifts	100	89	0.20 Diesel	Forklifts100	0.4	3.5	6.0	0.2	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	9.46	0.0	0.0	9.5	927
nase1	Generator Sets	6	8 Generator Sets	25	84		Generator Sets25	2.6	23.6	24.9	0.7	0.7	0.0	0.0	0.2	0.3	0.0	0.0	0.0	35.61	0.0	0.0	35.7	3488
ase1	Graders	6	8 Graders	175	187	7 0.41 Diesel	Graders175	2.2	23.6	10.2	0.8	0.7	0.0	0.0	0.2	0.1	0.0	0.0	0.0	40.80	0.0	0.0	40.9	3996
ase1	Carts/ATVs	8	8 Other General Industrial Equipn	ent 100	88	0.34 Diesel	Other General Industrial Equipment 100	0.9	6.7	13.6	0.4	0.3	0.0	0.0	0.1	0.1	0.0	0.0	0.0	21.25	0.0	0.0	21.3	2081
ase1	Rollers	3	8 Rollers	75	80	0.38 Diesel	Rollers75	0.4	4.4	5.5	0.2	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	8.09	0.0	0.0	8.1	793
ase1	Rubber Tired Dozers	3	8 Rubber Tired Dozers	300	247	7 0.40 Diesel	Rubber Tired Dozers300	2.1	21.0	17.0	0.9	0.9	0.0	0.0	0.2	0.2	0.0	0.0	0.0	26.50	0.0	0.0	26.6	2596
ase1	Scrapers	3	8 Scrapers	300	367	7 0.48 Diesel	Scrapers300	2.1	21.4	15.9	8.0	0.8	0.0	0.0	0.2	0.2	0.0	0.0	0.0	46.96	0.0	0.0	47.1	4600
ase1	Tractors/Loaders/Backhoes	6	8 Tractors/Loaders/Backhoes	100	97	0.37 Diesel	Tractors/Loaders/Backhoes100	0.7	5.2	11.8	0.3	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	19.04	0.0	0.0	19.1	1865
ase1	Trenchers	3	8 Trenchers	75	78		Trenchers75	0.9	8.5	7.6	0.6	0.5	0.0	0.0	0.1	0.1	0.0	0.0	0.0	10.40	0.0	0.0	10.4	1018
ase2	Graders	6	8 Graders	175	187		Graders175	2.2	23.6	10.2	0.8	0.7	0.0	0.1	1.0	0.5	0.0	0.0	0.0	170.96	0.0	0.0	171.5	16745
se2	Other Construction Equipment	4	8 Other Construction Equipment	175	172		Other Construction Equipment175	1.1	11.4	6.8	0.4	0.4	0.0	0.0	0.5	0.3	0.0	0.0	0.0	107.56	0.0	0.0	107.9	10534
ase2	Carts/ATVs	8	8 Other General Industrial Equipn		88		Other General Industrial Equipment100	0.9	6.7	13.6	0.4	0.3	0.0	0.0	0.3	0.6	0.0	0.0	0.0	89.04	0.0	0.0	89.3	8721
ase2	Rollers	6	8 Rollers	75	80		Rollers75	0.8	8.8	11.0	0.5	0.4	0.0	0.0	0.4	0.5	0.0	0.0	0.0	67.81	0.0	0.0	68.0	6642
se2	Rubber Tired Dozers	6	8 Rubber Tired Dozers	300	247		Rubber Tired Dozers300	4.3	41.9	34.0	1.9	1.7	0.1	0.2	1.8	1.5	0.1	0.1	0.0	222.10	0.0	0.0	222.9	21754
se2	Scrapers Tractors/Loaders/Backhoes	4	8 Scrapers	300 100	367 97		Scrapers300	2.8 0.7	28.5 5.2	21.3	0.3	1.0	0.1	0.1	1.3 0.2	0.9 0.5	0.0 0.0	0.0 0.0	0.0 0.0	262.40 79.78	0.0 0.0	0.0	263.3 80.1	25701
se2 se3	Graders	6	8 Tractors/Loaders/Backhoes8 Graders	175	187		Tractors/Loaders/Backhoes100 Graders175	2.2	23.6	11.8 10.2	0.8	0.2 0.7	0.0	0.0 0.0	0.2	0.5	0.0	0.0	0.0	79.78 87.42	0.0	0.0 0.0	87.7	7814 8563
se3	Other Construction Equipment	2	8 Other Construction Equipment	175	172		Other Construction Equipment175	0.8	23.0	10.2 5 1	0.8	0.7	0.0	0.0	0.3	0.2	0.0	0.0	0.0	41.25	0.0	0.0	41.4	4040
ise3	Carts/ATVs	3	8 Other General Industrial Equipm		88		Other General Industrial Equipment100	0.8	2.5	5.1	0.3	0.3	0.0	0.0	0.2	0.1	0.0	0.0	0.0	17.07	0.0	0.0	17.1	1672
ase3	Rollers	6	8 Rollers	75	80		Rollers75	0.8	8.8	11.0	0.5	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	34.68	0.0	0.0	34.8	3396
ase3	Rubber Tired Dozers	4	8 Rubber Tired Dozers	300	24		Rubber Tired Dozers300	2.8	28.0	22.7	1.2	1.1	0.0	0.1	0.6	0.5	0.0	0.0	0.0	75.72	0.0	0.0	76.0	7416
ase3	Scrapers	4	8 Scrapers	300	367		Scrapers300	2.8	28.5	21.3	1.1	1.0	0.1	0.1	0.6	0.5	0.0	0.0	0.0	134.18	0.0	0.0	134.6	13142
ase4	Graders	4	8 Graders	175	187		Graders175	1.4	15.7	6.8	0.5	0.5	0.0	0.0	0.4	0.2	0.0	0.0	0.0	58.28	0.0	0.0	58.5	5708
ase4	Carts/ATVs	3	8 Other General Industrial Equipn		88		Other General Industrial Equipment100	0.3	2.5	5.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	17.07	0.0	0.0	17.1	1672
ase4	Rollers	4	8 Rollers	75	80	0.38 Diesel	Rollers75	0.6	5.9	7.3	0.3	0.3	0.0	0.0	0.1	0.2	0.0	0.0	0.0	23.12	0.0	0.0	23.2	2264
se4	Tractors/Loaders/Backhoes	4	8 Tractors/Loaders/Backhoes	100	97	0.37 Diesel	Tractors/Loaders/Backhoes100	0.4	3.5	7.8	0.2	0.2	0.0	0.0	0.1	0.2	0.0	0.0	0.0	27.20	0.0	0.0	27.3	2664
e5	Forklifts	8	8 Forklifts	100	89		Forklifts100	0.6	4.7	8.0	0.2	0.2	0.0	0.1	0.6	1.0	0.0	0.0	0.0	156.85	0.0	0.0	157.4	15362
e5	Generator Sets	15	8 Generator Sets	25	84		Generator Sets25	6.5	58.9	62.3	1.8	1.6	0.1	0.8	7.7	8.1	0.2	0.2	0.0	1106.45	0.0	0.0	1,110.2	108369
e5	Carts/ATVs	12	8 Other General Industrial Equipn	ent 100	88	0.34 Diesel	Other General Industrial Equipment100	1.3	10.0	20.4	0.5	0.5	0.0	0.2	1.3	2.7	0.1	0.1	0.0	396.12	0.0	0.0	397.5	38797
e5	Rollers	3	8 Rollers	75	80	0.38 Diesel	Rollers75	0.4	4.4	5.5	0.2	0.2	0.0	0.1	0.6	0.7	0.0	0.0	0.0	100.57	0.0	0.0	100.9	9850
e5	Skid Steer Loaders	12	8 Skid Steer Loaders	75	65	0.37 Diesel	Skid Steer Loaders75	5.7	40.0	20.9	4.0	3.7	0.0	0.7	5.2	2.7	0.5	0.5	0.0	315.47	0.0	0.0	316.6	30899
e5	Post Drivers	15	8 Skid Steer Loaders	75	65	0.37 Diesel	Skid Steer Loaders75	7.2	50.0	26.2	5.0	4.6	0.0	0.9	6.5	3.4	0.7	0.6	0.0	394.34	0.0	0.0	395.7	38623
e5	Tractors/Loaders/Backhoes	3	8 Tractors/Loaders/Backhoes	100	97	0.37 Diesel	Tractors/Loaders/Backhoes100	0.3	2.6	5.9	0.1	0.1	0.0	0.0	0.3	0.8	0.0	0.0	0.0	118.32	0.0	0.0	118.7	11588
e5	Trenchers	7	8 Trenchers	75	78	0.50 Diesel	Trenchers75	2.1	19.9	17.6	1.3	1.2	0.0	0.3	2.6	2.3	0.2	0.2	0.0	301.50	0.0	0.0	302.5	29530
se5	Pumps	5	8 Pumps	25	84	0.74 Diesel	Pumps25	2.4	19.9	21.8	0.6	0.6	0.0	0.3	2.6	2.8	0.1	0.1	0.0	368.80	0.0	0.0	370.1	36122
e6	Aerial Lifts	4	8 Aerial Lifts	75	63	0.31 Diesel	Aerial Lifts75	0.1	2.0	4.4	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	21.45	0.0	0.0	21.5	2101
e6	Cranes	3	8 Cranes	175	233	L 0.29 Diesel	Cranes175	1.0	11.2	6.0	0.5	0.4	0.0	0.0	0.4	0.2	0.0	0.0	0.0	55.13	0.0	0.0	55.3	5400
e6	Forklifts	3	8 Forklifts	100	89	0.20 Diesel	Forklifts100	0.2	1.8	3.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	14.65	0.0	0.0	14.7	1435
e6	Carts/ATVs	3	8 Other General Industrial Equipn		88	0.34 Diesel	Other General Industrial Equipment 100	0.3	2.5	5.1	0.1	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	24.66	0.0	0.0	24.7	2416
se6	Tractors/Loaders/Backhoes	7	8 Tractors/Loaders/Backhoes	100	97		Tractors/Loaders/Backhoes100	0.8	6.1	13.7	0.3	0.3	0.0	0.0	0.2	0.4	0.0	0.0	0.0	68.75	0.0	0.0	69.0	6734
se6	Trenchers	7	8 Trenchers	75 	78		Trenchers75	2.1	19.9	17.6	1.3	1.2	0.0	0.1	0.6	0.6	0.0	0.0	0.0	75.09	0.0	0.0	75.3	7354
se7	Aerial Lifts	4	8 Aerial Lifts	75 175	63		Aerial Lifts75	0.1	2.0	4.4	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	28.38	0.0	0.0	28.5	2779
se7	Cranes	4	8 Cranes	175	23:		Cranes175	1.4	14.9	8.0	0.6	0.6	0.0	0.1	0.6	0.3	0.0	0.0	0.0	97.26	0.0	0.0	97.6	9526
se7	Crawler Tractors Forklifts	3	8 Crawler Tractors	175	217		Crawler Tractors175	1.5	16.4	8.8	0.7	0.6	0.0	0.1	0.7	0.4	0.0	0.0	0.0	99.25 19.38	0.0	0.0	99.6	9721
se7	Generator Sets	3 3	8 Forklifts 8 Generator Sets	100 25	89 84		Forklifts100 Generator Sets25	0.2 1.3	1.8 11.8	3.0 12.5	0.1 0.4	0.1 0.3	0.0 0.0	0.0 0.1	0.1 0.5	0.1 0.5	0.0 0.0	0.0 0.0	0.0 0.0	72.92	0.0 0.0	0.0 0.0	19.4 73.2	1898 7142
ase7 ase7	Carts/ATVs	3	8 Other General Industrial Equipn		88		Other General Industrial Equipment100	0.3	2.5	5.1	0.4	0.3	0.0	0.0	0.5	0.3	0.0	0.0	0.0	32.63	0.0	0.0	73.2 32.7	3196
ase7	Tractors/Loaders/Backhoes	4	8 Tractors/Loaders/Backhoes	100	97		Tractors/Loaders/Backhoes100	0.4	3.5	7.8	0.2	0.1	0.0	0.0	0.2	0.2	0.0	0.0	0.0	51.98	0.0	0.0	52.7	5091
507	Tractors, Eduacis, Backinges	-	o Tractors, Educats, Backinges	100	3,	0.57 Diesei		1 ***					0.0	0.0						1 32.30			J2.2	
										Pounds	per day					Tons p	er year			N	etric ton	s per ye	ar	Gal per
							Phase	ROG	NOX			PM2.5	1 SO2	ROG	NOX	СО	PM10	PM2.5	SO2	CO2	CH4	N2O	CO2e	year
							Phase1	12.3	117.9			4.5	0.2	0.1	1.2	1.2	0.1	0.0	0.0	218.1	0.0	0.0	218.9	21363
							Phase2 Phase3	12.7 9.8	126.2 100.0		5.3 4.1	4.8 3.7	0.2 0.2	0.6 0.2	5.6 2.2	4.8 1.7	0.2 0.1	0.2 0.1	0.0 0.0	999.7 390.3	0.0 0.0	0.0 0.0	1003.1 391.7	97910 38230
							Phase4	2.8	27.6	75.4 27.1	1.1	3.7 1.0	0.2	0.2	0.6	0.6	0.0	0.1	0.0	125.7	0.0	0.0	126.1	12309
							Phase5	26.5	210.5		13.8	12.7	0.3	3.5	27.5	24.6	1.8	1.7	0.0	3258.4	0.1	0.0	3269.6	319140
							Phase6	4.6	43.4	49.8	2.4	2.2	0.1	0.1	1.4	1.6	0.1	0.1	0.0	259.7	0.0	0.0	260.6	25439
							Phase7	5.3	52.8	49.5	2.1	1.9	0.1	0.2	2.3	2.1	0.1	0.1	0.0	401.8	0.0	0.0	403.2	39353
														1						I				

Employee Commute Trips - Unmitigated and Uncontrolled Fugitive Dust

																		202	4									6
								STREX and HTSK	13	14	15	16	18	17	19	20									21	22 23	,	
								RUNEX, PMBW, PMTW,	2	3	4	5	7	6	8	9									10	11 12		
	Vahialaa/	C:l-		N4:1/-l								Pound	s per day							Tons	per year	•			Met	tric tons pe	er year	
Code	Vehicles/ day	Single Trips/day	Speed (mph)	Miles/d ay	Vehicle	Vehicle Type	Fuel	Concat	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4 N2	O CO2e	Gal per year
Phase5	302	604		15402	Employee	LDA-LDTOffsite	Gas	LDA-LDTOffsite	3.8	2.5	33.4	0.0	0.0	6.1	1.0	0.1	0.5	0.3	4.4	0.0	0.0	0.8	0.1	0.0	1,205.4	0.0 0.0	0 1,214.6	
Phase5	302	604	Unmit	604	Onsite Employee	LDA-LDTOnsite	Gas	LDA-LDTOnsiteUnmit	3.4	0.5	5.8	0.0	0.0	333.1	33.3	0.0	0.4	0.1	0.8	0.0	0.0	43.5	4.3	0.0	58.6	0.0 0.0	0 60.8	6674
	1 vehicle per wo	rker							_							_								_				_
												Pound	s per day							Tons	per year	•			Met	tric tons pe	er year	
								Phase	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4 N20	O CO2e	Gal per year
								Phase1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0	0.0	0.0
								Phase2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0	0.0	0.0
								Phase3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0	0.0	0.0
								Phase4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0	0.0	0.0
								Phase5	7.2	3.0	39.3	0.1	0.0	339.2	34.3	0.1	0.9	0.4	5.1	0.0	0.0	44.3	4.5	0.0	1,264.0	0.0 0.0	0 1,275.4	143963.4
								Phase6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0	0.0	0.0
								Phase7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0	0.0	0.0

Appendix B: Air Quality and Greenhouse Gas Mass Emission Modeling

Vendor and Water Truck Trips - Unmitigated and Uncontrolled Fugitive Dust

																			2	2024										
									STREX and HTSK	13	14	15	16	18	17	19	20									21	22	23		
			mph	5					RUNEX, PMBW, PMTW, and N	V. 2	3	4	5	7	6	8	9									10	11			
7-d-	Vabialas/da	Single	Use Mak /Day	Conned (manh	\	ay Vehicle	Vehicle Type	Fuel	Laskum				Pou	nds per da	ау						Т	ons per yea	ar				Metric to	ons per yea	ar	-
Code	Vehicles/ da	Trips/day	nrs/ ven/ Da	y Speed (mph) Willes/da	y venicle	venicie Type	Fuel	Lookup	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4	N2O	CO2e	Gal per yea
Vater Trucks																													!	
hase1	0	0			0	Offsite Water Truck	T6offsite	Diesel	T6offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
hase2	0	0			0	Offsite Water Truck	T6offsite	Diesel	T6offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
hase3	0	0			0	Offsite Water Truck	T6offsite	Diesel	T6offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
hase4	0	0			0	Offsite Water Truck	T6offsite	Diesel	T6offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
hase5	12	24			24	Offsite Water Truck	T6offsite	Diesel	T6offsite	0.0	0.7	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	21	0.0	0.0	22	2034
hase6	0	0			0	Offsite Water Truck	T6offsite	Diesel	T6offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
hase7	0	0			0	Offsite Water Truck	T6offsite	Diesel	T6offsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
hase1	0	0	2	Unmit	0	Onsite Water Truck	T6Onsite	Diesel	T6OnsiteUnmitIndustrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
hase2	0	0	2	Unmit	0	Onsite Water Truck	T6Onsite	Diesel	T6OnsiteUnmitIndustrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
hase3	0	0	2	Unmit	0	Onsite Water Truck	T6Onsite	Diesel	T6OnsiteUnmitIndustrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
hase4	0	0	2	Unmit	0	Onsite Water Truck	T6Onsite	Diesel	T6OnsiteUnmitIndustrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
hase5	12	12	2	Unmit	120	Onsite Water Truck	T6Onsite	Diesel	T6OnsiteUnmitIndustrial	0.0	0.6	0.2	0.0	0.0	66.2	12.8	0.0	0.0	0.1	0.0	0.0	0.0	8.6	1.7	0.0	40	0.0	0.0	42	3930
hase6	0	0	2	Unmit	0	Onsite Water Truck	T6Onsite	Diesel	T6OnsiteUnmitIndustrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
hase7 /endor Trucks	0	0	2	Unmit	0	Onsite Water Truck	T6Onsite	Diesel	T6OnsiteUnmitIndustrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
Phase5	155	310	_		17050	Offsite Vendor Truck	T7offsite	Diesel	T7offsite	1.9	69.0	21.0	0.8	0.7	10.3	2.2	0.6	0.2	9.0	2.7	0.1	0.1	1.3	0.3	0.1	7,533	0.0	1.2	7,887	737789
hase5	155	310	-	Unmit	78	Onsite Vendor Truck	T7Onsite	Diesel		1.3	17.6	18.3		0.0	42.8	4.3	0.0	0.2	2.3	2.4	0.0	0.0	5.6	0.6	0.0	408	0.0	0.1	427	39926
														nds per da	•						Т	ons per yea						ons per yea		
									Phase	ROG	NOX	СО	PM10			PM2.5 D	SO2	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4			Gal per ye
									Phase1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
									Phase2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0	0.0 0.0	0	0.0	0.0	0	0
									Phase3 Phase4	0.0 0.0	0.0 0.0	0.0 0.0	0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0	0.0	0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0	0.0	0	0.0 0.0	0.0 0.0	0 0	0
									Phase5	3.2	87.9	39.9	0.8	0.8	119.3	19.3	0.6	0.0	11.5	5.2	0.0	0.0	15.6	2.5	0.0	8,001	0.0	1.3	8,377	783,679
									Phase6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
									Phase7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0
																													!	

Earthmoving and Paving - Unmitigated and Uncontrolled Fugitive Dust

															202	4									
		Cuadina/Stuin	Dawrey /Free vete	Doning					Pounds	per day							Ton	ıs per ye	ear			ľ	Metric to	ns per y	ear
Code	Air Basin	Grading/Strip (acres/day)	Borrow/Excavate (cy/day)	Dozing hr/day	Paving (sf/day)	ROG	NOX	со	PM10	PM2.5 PI	M10 D	PM2.5 D	SO2	ROG	NOX	со	PM10) PM2.	.5 PM10	D PM2.5	SO2	CO2	CH4	N2O	CO2e
Phase1	MDAB	0.0	0	24	0	0.0					18.1	9.9		0.0					0.2	0.1					
Phase2	MDAB	7.6	0	48	0	0.0					44.1	20.7		0.0					1.9	0.9					
Phase3	MDAB	0.0	0	32	0	0.0					24.1	13.2		0.0					0.5	0.3					
Phase	Activity	Total	Unit	Total days	Unit/Day																				
Phase2	Grading	665	acres	88	7.6																				
Phase	Activity	Number of Pieces	Total Hours/Day																						
Phase1	Dozing	3	24																						
Phase2	Dozing	6	48																						
Phase3	Dozing	4	32																						

				Pounds	per day							Tons	per year				M	letric tor	ns per yea	ar
Phase	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4	N2O	CO2e
Phase1	0.0	0.0	0.0	0.0	0.0	18.1	9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0
Phase2	0.0	0.0	0.0	0.0	0.0	44.1	20.7	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.9	0.0	0.0	0.0	0.0	0.0
Phase3	0.0	0.0	0.0	0.0	0.0	24.1	13.2	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.0	0.0
Phase4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Demolition - Unmitigated and Uncontrolled Fugitive Dust

													202	4									
	Ain Danin	Character and a	C/-l				Pounds	s per day							Tons	per year				N	letric to	ns per ye	ar
Code	Air Basin	Structures	Sq/day	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4	N2O	CO2e
Phase2	MDAB	N/A	80						0.1	0.0							0.0	0.0					
							Pounds	s per day							Tons	per year				N	/letric to	ns per ye	 ear
			Phase	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4	N2O	CO2e
			Phase1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			Phase2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			Phase3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			Phase4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			Phase5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			Phase6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			Phase7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Water-Related Energy

													20	024										
		Total Electricity Demand	Total Electricity Demand				Pounds	s per day							Tons p	er year				M	letric to	ns per ye	ar	П
Code	Air Basin	(MWh)	per day (MWh)	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4	N2O	CO2e	kWh po year
Phase5	MDAB	724	2.8																	168	0.0	0.0	168	72404
							Pounds	s per day				1			Tons p	er year				М	letric to	ns per ye	 ear	
			Phase	ROG	NOX	со	PM10			PM2.5 D	SO2	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4	N2O		kWh pe year
Total Water Demand (ac-ft)	200	water now coming from	Phase1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gallons	65,170,200	on-site wells	Phase2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
мб	65		Phase3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
kWh	724041		Phase4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MWh	724		Phase5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	168.2	0.0	0.0	168.2	724040
		•	Phase6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
			Phase7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Loss of Carbon from Tree Removal

Rates per CUFR

CO2 Sequ	uestration	Total CO2 St	ored
lb/tree/year	MT/tree/year	lb/tree	MT/tree
11.9	0.005	223.8	0.102

Totals for Bullhead

	CO2 Seques	tration	Total CO2	Stored
lb/year	MT/year	MT over life (30 years)	lb stored	MT stored
27,370	12	372.44	514,740	233

Total	606
-------	-----

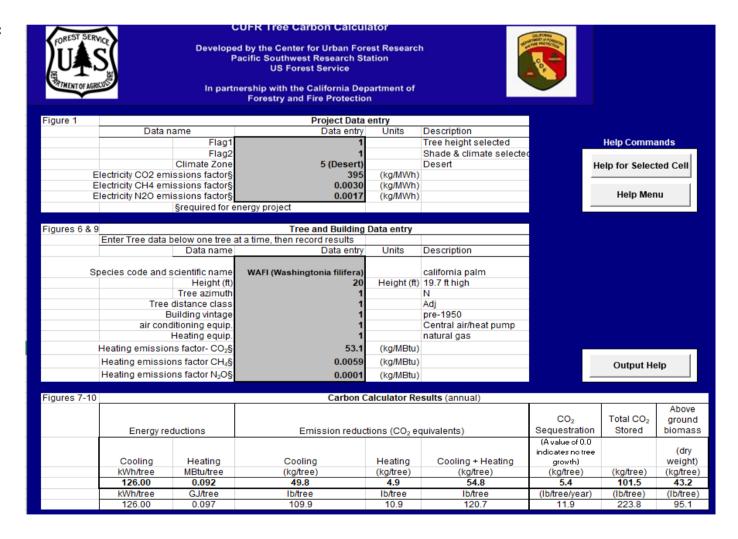
Assumptions:

- 1 Proposed project would remove approximately 1,050 Joshua Trees during site prep. To be conservative, it was assumed that all removed trees would be mulched.
- 2 The CUFR Tree Carbon Calculator does not include Joshua Trees (Yucca brevifolia). Per the Help guide, if the desired species is not included in the list, the user should input a species from the same climate zone with the most similar growth rate and mature size. With this in mind, Climate Zone 5 (Desert) was chosen, and Washingtonia filifera (California palm) was chosen. (https://www.fs.usda.gov/ccrc/tools/tree-carbon-calculator-ctcc)
- 3 Joshua Trees average 20-70 ft tall, although trees exceeding 40 ft are rare. (https://www.fs.fed.us/database/feis/plants/tree/yucbre/all.html).

1 lb = 0.000453592 MT

Total Trees= 2300 Provided by the Applicant

Tree Calculator Screenshot:



Appendix B: Air Quality and Greenhouse Gas Mass Emission Modeling

Assumptions

General Assumptions

acre per SF conversion

lbs/gram0.002204623 Standardmt/gram0.000001 Standardmt/lbs0.000453592 Standardton/lbs0.0005 StandardGallons per acre-foot3.26E+05 Standardton per cy conversion1.2641662 CalEEModton per SF conversion0.046 CalEEMod

lbs CO2 per gallon of diesel22.5Climate Registry 2018lbs CO2 per gallon of gas19.4Climate Registry 2018

 MW/KW
 0.001

 CH4 GWP
 25 AR4

 N2O GWP
 298 AR4

CO2e lb/MWh 512 SCE 2020 EF https://www.edison.com/home/sustainability-report.html

2.30E-05 Standard

CH4 lb/MWh

0 SCE rate is CO2e - CH4 already included
N2O lb/MWh

0 SCE rate is CO2e - N2O already included

Single trips per vehicle 2 STREX, HTSK, RUNLS calculations for routine vehicles assume 2 single trips per vehicle/day

Employee commute distance (paved)

25.5 miles/trip

Travel distance provided in TIS from 9/15/2021: 26.5 miles. 25.5 assumed to be paved, 1 miles unpaved.

Average onsite water truck speed on-site (for estimating VMT based on hours)

Vendor trip distance MDAB (paved)

55 miles

Average trip length for trucks delivering materials, and equipment from local and non-local sources from EDF data response.

Construction Water Truck Trip (paved)

Water will be sourced by on-site wells.

Total Demolition 7,079 sf
Annual Processing Rate Concrete 0 CY
Distance Unpayed onsite - Water truck 1 00 miles

Distance Unpaved onsite - Water truck

Distance Unpaved onsite - Vendor Truck

0.25 miles

Offroad Equipment Match

Eqpt Description (Valentine)

CalEEMod Equipment Name

Aerial Lifts Aerial Lifts
Air Compressors Air Compressors

Carts/ATVs Other General Industrial Equipment

Cranes Crawler Tractors Crawler Tractors
Forklifts Forklifts
Generator Sets
Graders Graders

Off-Highway Trucks Off-Highway Trucks

Other Construction Equipment
Other Equipment
Other Construction Equipment
Other Construction Equipment

Post Drivers Skid Steer Loaders

Pumps Pumps Rollers Rollers

Rubber Tired Dozers

Scrapers

Skid Steers

Skid Steer Loaders

Skid Steer Loaders

Tractors/Loaders/Backhoes

Rubber Tired Dozers

Scrapers

Skid Steer Loaders

Skid Steer Loaders

Tractors/Loaders/Backhoes

Trenchers Trenchers Welders Welders

Vehicle Match

<u>Onsite</u>

Onsite Water Truck T6Onsite
Onsite Vendor Truck T7Onsite
Onsite Employee LDA-LDTOnsite

Offsite Vehicles

Offsite Vendor Truck T7offsite
Employee LDA-LDTOffsite
Offsite Water Truck T6offsite

Construction Schedule

Phase	Code	Start Date	End Date	Working Days	Days/Week	2024	
Move On	Phase1	1/1/2024	1/30/2024	21	5	21	
Site Preparation & Grading	Phase2	1/1/2024	5/1/2024	88	5	88	
New Access Road Construction	Phase3	1/1/2024	3/1/2024	45	5	45	
Internal Roads Construction	Phase4	1/1/2024	3/1/2024	45	5	45	
Solar Array Structural, Underground & Panel Installation, Battery Storage	Phase5	1/1/2024	12/31/2024	261	5	261	
Electrical Substation & Microwave Tower Construction	Phase6	1/1/2024	4/1/2024	65	5	65	
Generation Tie Line Construction	Phase7	1/1/2024	4/30/2024	86	5	86	

Source: CalEEMod version 2022, Appendix G - Table G-11 (Unmitigated)

Equipment Type	Year	Concatenate	НР	2 3 ROG	NOX	co	PM10	PM2.5	SO2	8 9 CO2	CH4	N2O	
Aerial Lifts Aerial Lifts	2024 2024	2024Aerial Lifts0 2024Aerial Lifts25	0 25	0.838 0.158	6.398 2.886	4.045 3.111	0.248 0.022	0.228 0.020	0.012 0.005	848.447 586.903	0.034 0.024	0.003	
Aerial Lifts Aerial Lifts	2024	2024Aerial Lifts23 2024Aerial Lifts50	50	0.138	1.642	3.111	0.022	0.020	0.005	527.849	0.024	0.00	
Aerial Lifts	2024	2024Aerial Lifts75	75	0.093	1.438	3.176	0.019	0.017	0.005	527.988	0.021	0.004	
Aerial Lifts	2024	2024Aerial Lifts100	100	0.086	0.572	2.857	0.024	0.022	0.005	527.719	0.021	0.004	
Aerial Lifts	2024	2024Aerial Lifts175	175	0.081	0.684	0.968	0.009	0.009	0.005	527.713	0.021	0.004	
Aerial Lifts Air Compressors	2024 2024	2024Aerial Lifts300 2024Air Compressors0	300 0	0.065 0.591	0.263 4.417	0.958 2.622	0.009 0.183	0.008 0.169	0.005 0.008	527.713 569.937	0.021 0.023	0.00 ⁴ 0.00 ⁵	
Air Compressors	2024	2024Air Compressors25	25	0.581	3.865	4.881	0.136	0.105	0.003	568.361	0.023	0.00	
Bore/Drill Rigs	2024	2024Bore/Drill Rigs0	0	0.843	6.437	3.804	0.242	0.223	0.011	851.027	0.035	0.00	7
Bore/Drill Rigs	2024	2024Bore/Drill Rigs25	25	0.615	4.201	4.375	0.221	0.204	0.006	598.652	0.024	0.00	
Bore/Drill Rigs Bore/Drill Rigs	2024 2024	2024Bore/Drill Rigs50 2024Bore/Drill Rigs75	50 75	0.222 0.165	3.304 1.952	3.296 3.277	0.160 0.072	0.147 0.067	0.005 0.005	518.484 521.434	0.021 0.021	0.00 ⁴ 0.00 ⁴	
Bore/Drill Rigs	2024	2024Bore/Drill Rigs100	100	0.105	1.932	2.960	0.072	0.007	0.005	532.059	0.021	0.004	
Bore/Drill Rigs	2024	2024Bore/Drill Rigs175	175	0.116	1.118	1.058	0.036	0.033	0.005	524.922	0.021	0.004	
Bore/Drill Rigs	2024	2024Bore/Drill Rigs300	300	0.099	0.769	0.982	0.028	0.025	0.005	522.319	0.021	0.004	
Bore/Drill Rigs Bore/Drill Rigs	2024 2024	2024Bore/Drill Rigs600 2024Bore/Drill Rigs750	600 750	0.078 0.169	0.560 3.854	0.967 0.991	0.022 0.089	0.020 0.082	0.005	532.561 526.939	0.022 0.021	0.00 ⁴ 0.00 ⁴	
Cement and Mortar Mixers	2024	2024Cement and Mortar Mixers0	0	0.169	4.202	3.257	0.089	0.082	0.005 0.009	570.167	0.021	0.002	
Concrete/Industrial Saws	2024	2024Concrete/Industrial Saws0	Ö	0.593	4.531	2.447	0.169	0.156	0.008	594.363	0.024	0.005	
Concrete/Industrial Saws	2024	2024Concrete/Industrial Saws25	25	0.470	3.744	4.381	0.117	0.108	0.007	574.905	0.023	0.00	
Cranes	2024	2024Cranes0 2024Cranes25	0	1.235	4.864	5.722	0.382	0.351	0.005	586.607	0.024	0.00	
Cranes Cranes	2024 2024	2024Cranes25 2024Cranes50	25 50	2.026 1.331	5.983 9.967	7.537 4.582	0.603 0.938	0.555 0.863	0.005 0.005	592.536 531.141	0.024 0.022	0.005 0.004	
Cranes	2024	2024Cranes75	75	0.478	4.283	3.851	0.269	0.247	0.005	526.264	0.021	0.004	
Cranes	2024	2024Cranes100	100	0.394	3.790	3.399	0.205	0.188	0.005	528.401	0.021	0.004	1
Cranes	2024	2024Cranes175	175	0.294	3.150	1.684	0.131	0.121	0.005	527.567	0.021	0.004	
Cranes Cranes	2024 2024	2024Cranes300 2024Cranes600	300 600	0.210 0.387	2.131 3.917	1.680 2.885	0.086 0.194	0.079 0.178	0.005 0.005	527.532 527.321	0.021 0.021	0.00 ⁴ 0.00 ⁴	
Cranes	2024	2024Cranes750	750	0.574	6.840	4.895	0.303	0.178	0.005	527.566	0.021	0.004	
Crawler Tractors	2024	2024Crawler Tractors25	25	1.777	5.035	6.765	0.472	0.434	0.005	583.519	0.024	0.005	5
Crawler Tractors	2024	2024Crawler Tractors50	50	1.948	15.424	6.314	1.131	1.040	0.005	527.171	0.021	0.004	
Crawler Tractors	2024	2024Crawler Tractors 100	75 100	0.500	4.305	3.807	0.328	0.301	0.005	528.713 527.500	0.021	0.004	
Crawler Tractors Crawler Tractors	2024 2024	2024Crawler Tractors100 2024Crawler Tractors175	100 175	0.327 0.308	3.049 3.391	3.228 1.820	0.171 0.140	0.157 0.129	0.005 0.005	527.599 527.475	0.021 0.021	0.00 ⁴ 0.00 ⁴	
Crawler Tractors	2024	2024Crawler Tractors300	300	0.308	1.935	1.463	0.140	0.129	0.005	527.475	0.021	0.002	
Crawler Tractors	2024	2024Crawler Tractors600	600	0.449	5.569	2.736	0.202	0.186	0.005	524.584	0.021	0.004	4
Crawler Tractors	2024	2024Crawler Tractors750	750	0.287	5.126	1.502	0.128	0.118	0.005	531.504	0.022	0.004	
Dumpers/Tenders Excavators	2024 2024	2024Dumpers/Tenders0 2024Excavators0	0 0	0.571 0.881	4.368 6.483	2.359 3.580	0.163 0.251	0.150 0.231	0.007 0.011	573.018 845.871	0.023 0.034	0.005	
Excavators	2024	2024Excavators0	25	0.881	3.501	4.197	0.231	0.231	0.011	587.317	0.034	0.00	
Excavators	2024	2024Excavators50	50	0.706	6.389	4.102	0.559	0.514	0.005	527.683	0.021	0.004	
Excavators	2024	2024Excavators75	75	0.207	2.170	3.455	0.094	0.086	0.005	525.352	0.021	0.004	
Excavators	2024	2024Excavators100	100	0.172	1.338	3.084	0.066	0.061	0.005	527.999	0.021	0.004	
Excavators Excavators	2024 2024	2024Excavators175 2024Excavators300	175 300	0.141 0.121	1.138 0.825	1.110 1.046	0.037 0.028	0.034 0.026	0.005 0.005	528.451 527.003	0.021 0.021	0.00 ⁴ 0.00 ⁴	
Excavators	2024	2024Excavators600	600	0.195	2.047	1.567	0.020	0.075	0.005	530.825	0.022	0.004	
Excavators	2024	2024Excavators750	750	0.081	2.359	0.992	0.021	0.020	0.005	533.664	0.022	0.004	
Forklifts	2024	2024Forklifts25	25	0.692	4.035	5.083	0.203	0.187	0.005	587.146	0.024	0.00	
Forklifts Forklifts	2024 2024	2024Forklifts50 2024Forklifts75	50 75	1.714 0.292	13.487 2.751	5.647 3.615	1.051 0.157	0.967 0.145	0.005 0.005	524.509 527.040	0.021 0.021	0.00 ⁴ 0.00 ⁴	
Forklifts	2024	2024Forklifts100	100	0.225	1.870	3.173	0.096	0.089	0.005	527.512	0.021	0.004	
Forklifts	2024	2024Forklifts175	175	0.191	1.580	1.208	0.060	0.055	0.005	528.244	0.021	0.004	
Forklifts	2024	2024Forklifts300	300	0.236	1.905	1.252	0.072	0.066	0.005	531.099	0.022	0.004	
Forklifts Forklifts	2024 2024	2024Forklifts600 2024Forklifts750	600 750	0.236 0.107	1.905 2.412	1.252 1.032	0.072 0.022	0.066 0.021	0.005 0.005	531.099 527.640	0.022 0.021	0.00 ⁴ 0.00 ⁴	
Generator Sets	2024	2024Forkints750 2024Generator Sets0	730	0.107	4.373	2.881	0.022	0.021	0.003	568.315	0.021	0.002	
Generator Sets	2024	2024Generator Sets25	25	0.393	3.583	3.788	0.108	0.099	0.007	568.327	0.023	0.00	
Graders	2024	2024Graders0	0	1.988	6.089	7.740	0.734	0.675	0.005	587.012	0.024	0.005	
Graders Graders	2024 2024	2024Graders25 2024Graders50	25 50	1.965	5.318 11.942	7.482	0.547	0.504	0.005	586.703 548.264	0.024	0.00	
Graders	2024	2024Graders75	- 30 75	1.532 0.693	5.479	5.167 4.200	1.012 0.416	0.931 0.382	0.005 0.005	548.264 523.605	0.022 0.021	0.00 ⁴ 0.00 ⁴	
Graders	2024	2024Graders100	100	0.361	3.176	3.405	0.175	0.161	0.005	530.170	0.022	0.004	
Graders	2024	2024Graders175	175	0.266	2.909	1.262	0.097	0.089	0.005	527.899	0.021	0.004	
Graders	2024	2024Graders300 2024Graders600	300	0.295	3.105	1.098	0.116	0.106	0.005	524.569	0.021	0.004	
Graders Graders	2024 2024	2024Graders750 2024Graders750	600 750	0.295 0.404	3.105 5.913	1.098 1.980	0.116 0.169	0.106 0.156	0.005 0.005	524.569 527.817	0.021 0.021	0.00 ⁴ 0.00 ⁴	
Off-Highway Tractors	2024	2024Off-Highway Tractors0	0	4.056	7.675	11.147	1.055	0.971	0.005	586.526	0.024	0.00	
Off-Highway Tractors	2024	2024Off-Highway Tractors25	25	0.594	3.853	4.749	0.174	0.160	0.005	585.564	0.024	0.005	
Off-Highway Tractors	2024	2024Off-Highway Tractors75	50 75	0.332	3.056	3.748	0.163	0.150	0.005	527.719	0.021	0.004	
Off-Highway Tractors Off-Highway Tractors	2024 2024	2024Off-Highway Tractors75 2024Off-Highway Tractors100		0.278 0.179	2.839 1.457	3.604 3.115	0.173 0.069	0.159 0.064	0.005 0.005	529.217 527.441	0.021 0.021	0.00 ⁴ 0.00 ⁴	
Off-Highway Tractors	2024	2024Off-Highway Tractors175	175	0.179	1.489	1.157	0.055	0.051	0.005	527.766	0.021	0.002	
Off-Highway Tractors	2024	2024Off-Highway Tractors300	300	0.131	0.873	1.061	0.030	0.027	0.005	526.249	0.021	0.004	4
Off-Highway Tractors	2024	2024Off-Highway Tractors 750	600	0.248	1.713	1.086	0.088	0.081	0.005	524.222	0.021	0.004	
Off-Highway Tractors Off-Highway Trucks	2024 2024	2024Off-Highway Tractors750 2024Off-Highway Trucks0	750 0	0.273 2.460	3.628 5.694	1.296 8.624	0.098 0.639	0.090 0.588	0.005 0.005	527.635 586.605	0.021 0.024	0.00 ⁴ 0.00 ⁵	
Off-Highway Trucks	2024	2024Off-Highway Trucks25	25	0.591	3.953	5.246	0.039	0.388	0.005	581.963	0.024	0.003	
Off-Highway Trucks	2024	2024Off-Highway Trucks50	50	0.234	1.634	3.949	0.025	0.023	0.005	530.146	0.022	0.004	4
Off-Highway Trucks	2024	2024Off-Highway Trucks75	75 100	0.363	3.109	3.986	0.204	0.188	0.005	529.249	0.021	0.004	
Off-Highway Trucks Off-Highway Trucks	2024 2024	2024Off-Highway Trucks100 2024Off-Highway Trucks175	100 175	0.229 0.204	1.542 1.375	3.340 1.280	0.073 0.055	0.067 0.051	0.005 0.005	526.764 525.991	0.021 0.021	0.00 ⁴ 0.00 ⁴	
Off-Highway Trucks	2024	2024Off-Highway Trucks300	300	0.204	1.375	1.280	0.055	0.051	0.005	525.991 527.763	0.021	0.002	
Off-Highway Trucks	2024	2024Off-Highway Trucks600	600	0.259	2.069	1.655	0.079	0.073	0.005	527.454	0.021	0.004	4
Off-Highway Trucks	2024	2024Off-Highway Trucks750	750	0.191	3.225	1.202	0.060	0.056	0.005	528.577	0.021	0.004	
Other Construction Equipment	2024	2024Other Construction Equipment 25	0	0.822	6.236	4.875 5.016	0.242	0.222	0.013	848.428 590.090	0.034	0.007	
Other Construction Equipment Other Construction Equipment	2024 2024	2024Other Construction Equipment25 2024Other Construction Equipment50	25 50	0.825 0.839	4.496 7.684	5.016 4.274	0.304 0.578	0.280 0.532	0.005 0.005	590.090 519.506	0.024 0.021	0.005 0.004	
Other Construction Equipment	2024	2024Other Construction Equipment75	75	0.343	3.241	3.563	0.209	0.192	0.005	528.454	0.021	0.004	
Other Construction Equipment	2024	2024Other Construction Equipment100	100	0.264	2.544	3.158	0.132	0.121	0.005	525.865	0.021	0.004	4
Other Construction Equipment	2024	2024Other Construction Equipment175	175	0.210	2.242	1.337	0.087	0.080	0.005	528.722	0.021	0.004	
Other Construction Equipment Other Construction Equipment	2024 2024	2024Other Construction Equipment300 2024Other Construction Equipment600	300 600	0.163 0.172	1.563 1.790	1.305 1.100	0.059 0.062	0.054 0.057	0.005 0.005	528.223 528.615	0.021 0.021	0.00 ⁴ 0.00 ⁴	
Other Construction Equipment Other Construction Equipment	2024	2024Other Construction Equipment600 2024Other Construction Equipment750	750	0.172	1.790 2.901	1.100	0.062	0.057	0.005	528.615 527.547	0.021	0.004	
Other General Industrial Equipmen		2024Other General Industrial Equipment0	0	0.820	6.401	3.899	0.242	0.223	0.003	848.062	0.034	0.00	
Other General Industrial Equipmen	2024	2024Other General Industrial Equipment25	25	0.545	3.856	4.776	0.165	0.152	0.005	588.151	0.024	0.005	5
Other General Industrial Equipmen		2024Other General Industrial Equipment50	50	0.241	2.404	3.618	0.113	0.104	0.005	527.848	0.021	0.004	
Other General Industrial Equipment Other General Industrial Equipment		2024Other General Industrial Equipment75 2024Other General Industrial Equipment100	75 100	0.434 0.208	3.661 1.585	3.742 3.219	0.255 0.083	0.235 0.076	0.005 0.005	529.013 528.382	0.021 0.021	0.00 ⁴ 0.00 ⁴	
Other General Industrial Equipmen		2024Other General Industrial Equipment 100 2024Other General Industrial Equipment 175	100 175	0.208 0.190	1.585 1.711	3.219 1.176	0.083 0.057	0.076 0.052	0.005	528.382 528.768	0.021	0.004	
Other General Industrial Equipmen		2024Other General Industrial Equipment300	300	0.146	0.947	1.089	0.037	0.032	0.005	528.188	0.021	0.004	
		2024Other General Industrial Equipment600	600	0.095	0.516	1.184	0.023	0.022	0.005	528.187	0.021	0.004	
Other General Industrial Equipmen													
Other General Industrial Equipmen		2024Other General Industrial Equipment750	750 0	0.152	3.283	1.035	0.055	0.050	0.005	528.190	0.021	0.004	
• •	2024	2024Other General Industrial Equipment750 2024Other Material Handling Equipment0 2024Other Material Handling Equipment25	750 0 25	0.152 0.784 0.954	3.283 3.698 4.637	1.035 5.475 5.719	0.055 0.144 0.321	0.050 0.133 0.295	0.005 0.005 0.005	528.190 586.799 590.437	0.021 0.024 0.024	0.004 0.005 0.005	5

Equipment Type	Year	Concatenate 1	НР	2 3 ROG	NOX	co 5	PM10	7 PM2.5	SO2	CO2	10 CH4	N2O
Other Material Handling Equipment	2024	2024Other Material Handling Equipment75	75	0.181	1.983	3.425	0.074	0.068	0.005	528.694	0.021	0.004
Other Material Handling Equipment	2024	2024Other Material Handling Equipment100	100	0.245	1.964	3.320	0.107	0.098	0.005	527.725	0.021	0.004
Other Material Handling Equipment Other Material Handling Equipment	2024 2024	2024Other Material Handling Equipment175 2024Other Material Handling Equipment300	175 300	0.244 0.176	2.118 1.465	1.185 1.270	0.087 0.054	0.080 0.050	0.005 0.005	528.003 528.603	0.021 0.021	0.004 0.004
Other Material Handling Equipment	2024	2024Other Material Handling Equipment600	600	0.333	2.663	1.125	0.034	0.127	0.005	527.804	0.021	0.004
Other Material Handling Equipment	2024	2024Other Material Handling Equipment750	750	0.056	2.270	0.941	0.018	0.017	0.005	527.804	0.021	0.004
Pavers	2024	2024Pavers0	0	0.857	6.552	3.539	0.246	0.226	0.011	859.487	0.035	0.007
Pavers	2024 2024	2024Pavers25 2024Pavers50	25 50	0.948 0.932	4.191 6.997	4.942 4.049	0.278 0.675	0.256 0.621	0.005	587.664 524.123	0.024 0.021	0.005 0.004
Pavers Pavers	2024	2024Pavers75	75	0.932	2.708	4.049 3.423	0.675	0.621	0.005 0.005	524.123	0.021	0.004
Pavers	2024	2024Pavers100	100	0.196	1.854	3.015	0.088	0.081	0.005	528.824	0.021	0.004
Pavers	2024	2024Pavers175	175	0.130	1.480	1.009	0.048	0.044	0.005	528.480	0.021	0.004
Pavers	2024	2024Pavers300	300	0.103	0.978	0.975	0.027	0.025	0.005	527.659	0.021	0.004
Pavers	2024	2024Paving Fquipment0	600	0.059	0.261	0.947	0.009	0.008	0.005	527.836	0.021	0.004
Paving Equipment Paving Equipment	2024 2024	2024Paving Equipment0 2024Paving Equipment25	0 25	0.849 0.524	6.489 3.750	3.505 4.282	0.242 0.164	0.223 0.151	0.011 0.005	851.192 583.890	0.035 0.024	0.007 0.005
Paving Equipment	2024	2024Paving Equipment50	50	0.555	4.929	3.828	0.104	0.131	0.005	525.564	0.024	0.003
Paving Equipment	2024	2024Paving Equipment75	75	0.226	2.410	3.447	0.109	0.100	0.005	528.115	0.021	0.004
Paving Equipment	2024	2024Paving Equipment100	100	0.225	2.005	3.124	0.105	0.097	0.005	527.038	0.021	0.004
Paving Equipment	2024	2024Paving Equipment175	175	0.155	1.495	1.094	0.059	0.054	0.005	528.616	0.021	0.004
Paving Equipment Paving Equipment	2024 2024	2024Paving Equipment300 2024Paving Equipment600	300 600	0.138 0.147	1.315 1.318	1.021 1.001	0.044 0.036	0.040 0.033	0.005 0.005	527.215 528.802	0.021 0.021	0.004 0.004
Paving Equipment	2024	2024Paving Equipment750	750	0.147	2.366	1.001	0.030	0.033	0.005	528.095	0.021	0.004
Plate Compactors	2024	2024Plate Compactors0	0	0.547	4.143	3.470	0.162	0.149	0.009	568.353	0.023	0.005
Pressure Washers	2024	2024Pressure Washers0	0	0.534	4.414	3.275	0.184	0.169	0.009	578.474	0.023	0.005
Pressure Washers	2024	2024Pressure Washers25	25	0.282	3.526	3.313	0.090	0.082	0.008	582.246	0.024	0.005
Pumps	2024	2024Pumps0	0	0.581	4.365	3.012	0.185	0.170	0.008	568.303	0.023	0.005
Pumps Rollers	2024 2024	2024Pumps25 2024Rollers0	25 0	0.433 0.833	3.630 6.317	3.974 4.394	0.115 0.242	0.105 0.223	0.007 0.012	568.309 847.965	0.023 0.034	0.005 0.007
Rollers	2024	2024Rollers25	25	0.618	3.814	4.195	0.192	0.223	0.012	586.798	0.034	0.007
Rollers	2024	2024Rollers50	50	1.870	15.055	6.146	1.071	0.986	0.005	527.793	0.021	0.004
Rollers	2024	2024Rollers75	75	0.260	2.749	3.419	0.144	0.132	0.005	528.107	0.021	0.004
Rollers	2024	2024Rollers100	100	0.141	1.323	2.911	0.060	0.056	0.005	527.451	0.021	0.004
Rollers Rollers	2024 2024	2024Rollers175	175 300	0.214	2.357	1.522	0.091	0.083	0.005	528.113 530.541	0.021	0.004
Rollers Rough Terrain Forklifts	2024 2024	2024Rollers300 2024Rough Terrain Forklifts0	300 0	0.141 0.407	1.447 5.022	1.417 4.109	0.049 0.285	0.045 0.262	0.005 0.005	530.541 587.236	0.022 0.024	0.004 0.005
Rough Terrain Forklifts	2024	2024Rough Terrain Forklits5	25	0.407	3.541	3.799	0.283	0.262	0.005	586.945	0.024	0.005
Rough Terrain Forklifts	2024	2024Rough Terrain Forklifts50	50	2.020	9.515	6.280	0.825	0.759	0.005	562.208	0.023	0.005
Rough Terrain Forklifts	2024	2024Rough Terrain Forklifts75	75	0.125	1.794	3.224	0.043	0.040	0.005	528.511	0.021	0.004
Rough Terrain Forklifts	2024	2024Rough Terrain Forklifts100	100	0.200	1.675	2.951	0.111	0.102	0.005	527.958	0.021	0.004
Rough Terrain Forklifts Rough Terrain Forklifts	2024 2024	2024Rough Terrain Forklifts175 2024Rough Terrain Forklifts300	175 300	0.114 0.071	1.398 0.526	0.989 0.952	0.033 0.009	0.030 0.008	0.005 0.005	528.155 527.513	0.021 0.021	0.004 0.004
Rough Terrain Forklifts	2024	2024Rough Terrain Forklifts600	600	0.071	1.345	0.982	0.010	0.008	0.005	527.403	0.021	0.004
Rubber Tired Dozers	2024	2024Rubber Tired Dozers25	25	0.445	3.577	4.868	0.113	0.104	0.005	586.897	0.024	0.005
Rubber Tired Dozers	2024	2024Rubber Tired Dozers50	50	0.749	5.762	4.365	0.417	0.383	0.005	528.795	0.021	0.004
Rubber Tired Dozers	2024	2024Rubber Tired Dozers75	75	0.637	5.315	4.180	0.393	0.362	0.005	531.865	0.022	0.004
Rubber Tired Dozers Rubber Tired Dozers	2024 2024	2024Rubber Tired Dozers100 2024Rubber Tired Dozers175	100 175	0.585 0.525	5.165 5.776	3.763 3.784	0.333 0.257	0.306 0.237	0.005 0.005	528.043 528.759	0.021 0.021	0.004 0.004
Rubber Tired Dozers	2024	2024Rubber Tired Dozers300	300	0.409	4.010	3.253	0.237	0.237	0.005	532.203	0.021	0.004
Rubber Tired Dozers	2024	2024Rubber Tired Dozers600	600	0.226	2.868	1.090	0.081	0.075	0.005	527.876	0.021	0.004
Rubber Tired Loaders	2024	2024Rubber Tired Loaders0	0	0.849	6.490	3.505	0.243	0.223	0.011	851.331	0.035	0.007
Rubber Tired Loaders	2024	2024Rubber Tired Loaders25	25	1.015	4.494	6.022	0.288	0.265	0.005	589.803	0.024	0.005
Rubber Tired Loaders Rubber Tired Loaders	2024 2024	2024Rubber Tired Loaders50 2024Rubber Tired Loaders75	50 75	1.324 0.391	10.260 3.294	4.539 3.831	0.919 0.217	0.845 0.199	0.005 0.005	521.322 523.314	0.021 0.021	0.004 0.004
Rubber Tired Loaders	2024	2024Rubber Tired Loaders100	100	0.391	1.902	3.293	0.217	0.199	0.005	526.332	0.021	0.004
Rubber Tired Loaders	2024	2024Rubber Tired Loaders175	175	0.193	1.784	1.168	0.059	0.054	0.005	526.680	0.021	0.004
Rubber Tired Loaders	2024	2024Rubber Tired Loaders300	300	0.219	1.796	1.347	0.068	0.063	0.005	525.984	0.021	0.004
Rubber Tired Loaders	2024	2024Rubber Tired Loaders600	600	0.197	1.305	1.538	0.047	0.043	0.005	526.145	0.021	0.004
Rubber Tired Loaders	2024 2024	2024Rubber Tired Loaders750 2024Scrapers0	750	0.213	3.734	1.169	0.077	0.071	0.005	528.592	0.021	0.004
Scrapers Scrapers	2024	2024Scrapers25	0 25	0.175 3.417	2.892 6.751	3.416 9.617	0.011 0.949	0.010 0.873	0.005 0.005	586.963 577.150	0.024 0.023	0.005 0.005
Scrapers	2024	2024Scrapers50	50	0.755	5.825	4.082	0.495	0.455	0.005	531.943	0.023	0.003
Scrapers	2024	2024Scrapers75	75	0.518	5.413	3.995	0.386	0.355	0.005	530.381	0.022	0.004
Scrapers	2024	2024Scrapers100	100	0.313	2.915	3.342	0.153	0.140	0.005	531.820	0.022	0.004
Scrapers	2024	2024Scrapers175	175	0.321	3.212	1.700	0.145	0.134	0.005	527.327	0.021	0.004
Scrapers Scrapers	2024 2024	2024Scrapers300 2024Scrapers600	300 600	0.229 0.710	2.292 9.628	1.711 6.815	0.089 0.398	0.081 0.366	0.005 0.005	528.968 529.775	0.021 0.021	0.004 0.004
Scrapers	2024	2024Scrapers750	750	0.416	5.964	4.049	0.205	0.188	0.005	527.722	0.021	0.004
Signal Boards	2024	2024Signal Boards0	0	0.547	4.143	3.470	0.162	0.149	0.009	568.303	0.023	0.005
Signal Boards	2024	2024Signal Boards25	25	0.458	3.621	4.200	0.113	0.104	0.007	561.957	0.023	0.005
Skid Steer Loaders Skid Steer Loaders	2024 2024	2024Skid Steer Loaders0 2024Skid Steer Loaders25	0	0.848	6.496	3.494	0.250	0.230	0.011	848.207	0.034	0.007
Skid Steer Loaders Skid Steer Loaders	2024	2024Skid Steer Loaders25 2024Skid Steer Loaders50	25 50	0.349 0.142	3.338 1.918	3.662 3.255	0.088 0.059	0.081 0.054	0.005 0.005	588.969 528.170	0.024 0.021	0.005 0.004
Skid Steer Loaders	2024	2024Skid Steer Loaders75	75	1.125	7.862	4.112	0.784	0.721	0.005	523.523	0.021	0.004
Skid Steer Loaders	2024	2024Skid Steer Loaders100	100	0.131	1.244	2.879	0.053	0.048	0.005	526.346	0.021	0.004
Skid Steer Loaders	2024	2024Skid Steer Loaders175	175	0.105	1.185	0.989	0.036	0.034	0.005	528.250	0.021	0.004
Skid Steer Loaders Skid Steer Loaders	2024 2024	2024Skid Steer Loaders300 2024Skid Steer Loaders600	300 600	0.166 0.166	2.085 2.085	0.998 0.998	0.091 0.091	0.084 0.084	0.005 0.005	528.537 528.537	0.021 0.021	0.004 0.004
Skid Steer Loaders	2024	2024Skid Steer Loaders750	750	0.100	2.289	0.953	0.031	0.034	0.005	528.537	0.021	0.004
Surfacing Equipment	2024	2024Surfacing Equipment25	25	0.329	3.673	3.615	0.115	0.105	0.005	591.938	0.024	0.005
Surfacing Equipment	2024	2024Surfacing Equipment50	50	0.662	6.374	3.869	0.418	0.385	0.005	529.534	0.021	0.004
Surfacing Equipment	2024	2024Surfacing Equipment75	75 100	0.156	2.191	3.277	0.081	0.074	0.005	531.151	0.022	0.004
Surfacing Equipment	2024	2024Surfacing Equipment100	100 175	0.311	3.076 2.523	3.120	0.175	0.161	0.005	528.304 520.130	0.021	0.004
Surfacing Equipment Surfacing Equipment	2024 2024	2024Surfacing Equipment175 2024Surfacing Equipment300	175 300	0.193 0.117	2.533 1.236	1.320 1.071	0.084 0.046	0.078 0.043	0.005 0.005	529.139 527.717	0.021 0.021	0.004 0.004
Surfacing Equipment	2024	2024Surfacing Equipment600	600	0.117	0.888	0.996	0.046	0.043	0.005	527.717	0.021	0.004
Surfacing Equipment	2024	2024Surfacing Equipment750	750	0.119	2.799	1.123	0.047	0.044	0.005	527.931	0.021	0.004
Sweepers/Scrubbers	2024	2024Sweepers/Scrubbers0	0	0.802	6.371	4.138	0.242	0.223	0.012	849.744	0.034	0.007
Sweepers/Scrubbers	2024	2024Sweepers/Scrubbers25	25	0.745	4.075	4.998	0.238	0.219	0.005	587.008	0.024	0.005
Sweepers/Scrubbers	2024	2024Sweepers/Scrubbers50	50 75	0.954	6.991	4.372	0.629	0.579	0.005	524.229 528.146	0.021	0.004
Sweepers/Scrubbers Sweepers/Scrubbers	2024 2024	2024Sweepers/Scrubbers75 2024Sweepers/Scrubbers100	75 100	0.262 0.266	2.654 2.248	3.598 3.226	0.139 0.107	0.128 0.098	0.005 0.005	528.146 528.031	0.021 0.021	0.004 0.004
Sweepers/Scrubbers	2024	2024Sweepers/Scrubbers175	175	0.200	1.992	1.132	0.107	0.058	0.005	528.031	0.021	0.004
Sweepers/Scrubbers	2024	2024Sweepers/Scrubbers300	300	0.074	0.267	0.974	0.009	0.009	0.005	528.031	0.021	0.004
Sweepers/Scrubbers	2024	2024Sweepers/Scrubbers600	600	0.074	0.267	0.974	0.009	0.009	0.005	528.031	0.021	0.004
Sweepers/Scrubbers	2024	2024Sweepers/Scrubbers750	750	0.057	2.275	0.944	0.018	0.017	0.005	528.031	0.021	0.004
Tractors/Loaders/Backhoes Tractors/Loaders/Backhoes	2024 2024	2024Tractors/Loaders/Backhoes0 2024Tractors/Loaders/Backhoes25	0 25	0.846 0.596	6.467 3.809	3.493 4.658	0.242 0.168	0.222 0.154	0.011 0.005	848.372 580.944	0.034 0.024	0.007 0.005
	2024 2024	2024Tractors/Loaders/Backhoes25 2024Tractors/Loaders/Backhoes50	25 50	1.630	3.809 12.795	4.658 5.417	1.025	0.154 0.943	0.005	580.944 528.215	0.024	0.005
			75	0.215	2.192	3.417	0.097	0.943	0.005	529.933		0.004
Tractors/Loaders/Backhoes	2024	2024Tractors/Loaders/Backhoes75	, , ,	J J			,		U	J_J. 7 · ·	U.U/ I	
	2024 2024	2024Tractors/Loaders/Backhoes75 2024Tractors/Loaders/Backhoes100	100	0.176	1.380	3.096	0.069	0.063	0.005	526.286	0.021 0.021	0.004
Tractors/Loaders/Backhoes Tractors/Loaders/Backhoes Tractors/Loaders/Backhoes Tractors/Loaders/Backhoes	2024 2024	2024Tractors/Loaders/Backhoes100 2024Tractors/Loaders/Backhoes175	100 175	0.176 0.176	1.647	1.226	0.060	0.063 0.055	0.005 0.005	526.286 526.144	0.021 0.021	0.004 0.004
Tractors/Loaders/Backhoes Tractors/Loaders/Backhoes Tractors/Loaders/Backhoes Tractors/Loaders/Backhoes Tractors/Loaders/Backhoes	2024 2024 2024	2024Tractors/Loaders/Backhoes100 2024Tractors/Loaders/Backhoes175 2024Tractors/Loaders/Backhoes300	100 175 300	0.176 0.176 0.151	1.647 1.155	1.226 1.211	0.060 0.044	0.063 0.055 0.041	0.005 0.005 0.005	526.286 526.144 525.872	0.021 0.021 0.021	0.004 0.004 0.004
Tractors/Loaders/Backhoes Tractors/Loaders/Backhoes Tractors/Loaders/Backhoes Tractors/Loaders/Backhoes	2024 2024	2024Tractors/Loaders/Backhoes100 2024Tractors/Loaders/Backhoes175	100 175	0.176 0.176	1.647	1.226	0.060	0.063 0.055	0.005 0.005	526.286 526.144	0.021 0.021	0.004 0.004

Source: CalEEMod version 2022, Appendix G - Table G-11 (Unmitigated)

		1	2	2 3	4	5	6	7	8	9	10	11
Equipment Type	Year	Concatenate	HP	ROG	NOX	со	PM10	PM2.5	SO2	CO2	CH4	N2O
Trenchers	2024	2024Trenchers25	25	0.599	3.824	4.222	0.196	0.180	0.005	587.904	0.024	0.005
Trenchers	2024	2024Trenchers50	50	0.806	7.032	4.211	0.526	0.484	0.005	527.464	0.021	0.004
Trenchers	2024	2024Trenchers75	75	0.435	4.127	3.662	0.278	0.256	0.005	528.932	0.021	0.004
Trenchers	2024	2024Trenchers100	100	0.366	3.692	3.334	0.188	0.173	0.005	526.797	0.021	0.004
Trenchers	2024	2024Trenchers175	175	0.296	3.292	1.545	0.139	0.127	0.005	529.435	0.021	0.004
Trenchers	2024	2024Trenchers300	300	0.179	1.685	1.642	0.071	0.065	0.005	530.208	0.022	0.004
Trenchers	2024	2024Trenchers600	600	0.059	0.262	0.948	0.009	0.008	0.005	528.334	0.021	0.004
Trenchers	2024	2024Trenchers750	750	1.174	13.392	14.184	0.624	0.574	0.005	528.023	0.021	0.004
Welders	2024	2024Welders0	0	0.585	4.384	2.817	0.184	0.169	0.008	568.343	0.023	0.005
Welders	2024	2024Welders25	25	0.534	3.783	4.558	0.131	0.120	0.007	568.290	0.023	0.005

CalEEMod Construction Equipment Defaults

Source: CalEEMod version 2022, Table G-12, Appendix G (Diesel Only)

OFFROAD Equipment Type	Horsepower	Load Factor
Aerial Lifts	46	0.31
Air Compressors	37	0.48
Bore/Drill Rigs	83	0.50
Cement and Mortar Mixers	10	0.56
Concrete/Industrial Saws	33	0.73
Cranes	367	0.29
Crawler Tractors	87	0.43
Dumpers/Tenders	16	0.38
Excavators	36	0.38
Forklifts	82	0.20
Generator Sets	14	0.74
Graders	148	0.41
Off-Highway Tractors	38	0.44
Off-Highway Trucks	376	0.38
Other Construction Equipment	82	0.42
Other General Industrial Equipment	35	0.34
Other Material Handling Equipment	93	0.40
Pavers	81	0.42
Paving Equipment	89	0.36
Plate Compactors	8	0.43
Pressure Washers	14	0.30
Pumps	11	0.74
Rollers	36	0.38
Rough Terrain Forklifts	96	0.40
Rubber Tired Dozers	367	0.40
Rubber Tired Loaders	150	0.36
Scrapers	423	0.48
Signal Boards	6	0.82
Skid Steer Loaders	71	0.37
Surfacing Equipment	399	0.30
Sweepers/Scrubbers	36	0.46
Tractors/Loaders/Backhoes	84	0.37
Trenchers	40	0.50
Welders	46	0.45

Onroad Emission Factors- Unmitigated and Uncontrolled Fugitive Dust Source: EMFAC2021. Offsite emission factors for aggregate speeds. Onsite for speeds shown.

								Running	(RUNEX, PI	MTW, PM	BW) grams	per mile					Pro	cess (IDL	EX, STREX	, TOTEX, D	IURN, HTSK,	RUNLS,	RESTL) g	rams per	trip	
Year	Air Basin	VehType	Speed	Lookup	ROG	NOx	co	PM10 Ex	PM10 D	PM2.5 Ex	PM2.5 D	SO2	CO2	CH4	N2O	ROG	NOx	co	PM10 Ex	PM10 D	PM2.5 Ex	PM2.5	SO2	CO2	CH4	N2O
2023	MDAB	T6	Offsite	2023T6Offsite	0.01	0.89	0.05	0.01	0.22	0.01	0.04	0.01	1058	0.00	0.17	0.23	12.81	7.57	0.02	0.00	0.02	0.00	0.02	2262	0.01	0.36
2024	MDAB	T6	Offsite	2024T6Offsite	0.01	0.91	0.05	0.01	0.22	0.01	0.04	0.01	1055	0.00	0.17	0.22	12.76	7.53	0.02	0.00	0.02	0.00	0.02	2261	0.01	0.36
2023	MDAB	T7	Offsite	2023T7Offsite	0.02	1.39	0.07	0.02	0.27	0.02	0.06	0.02	1611	0.00	0.25	1.91	25.41	26.72	0.02	0.00	0.02	0.00	0.04	4662	0.09	0.73
2024	MDAB	T7	Offsite	2024T7Offsite	0.02	1.37	0.07	0.02	0.27	0.02	0.06	0.02	1608	0.00	0.25	1.90	25.43	26.80	0.02	0.00	0.02	0.00	0.04	4636	0.09	0.73
2023	MDAB	LDA-LDT	Offsite	2023LDA-LDTOffsite	0.01	0.07	0.92	0.00	0.18	0.00	0.03	0.00	304	0.00	0.01	2.67	0.31	3.78	0.00	0.00	0.00	0.00	0.00	77	0.08	0.04
2024	MDAB	LDA-LDT	Offsite	2024LDA-LDTOffsite	0.01	0.06	0.85	0.00	0.18	0.00	0.03	0.00	297	0.00	0.01	2.54	0.29	3.53	0.00	0.00	0.00	0.00	0.00	75	0.08	0.03
2023	MDAB	T6	OnsiteUnmit	2023T6OnsiteUnmit	0.01	0.89	0.05	0.01	250.18	0.01	25.03	0.01	1058	0.00	0.17	0.23	12.81	7.57	0.02	0.00	0.02	0.00	0.02	2262	0.01	0.36
2024	MDAB	T6	OnsiteUnmit	2024T6OnsiteUnmit	0.01	0.91	0.05	0.01	250.18	0.01	25.03	0.01	1055	0.00	0.17	0.22	12.76	7.53	0.02	0.00	0.02	0.00	0.02	2261	0.01	0.36
2023	MDAB	T7	OnsiteUnmit	2023T7OnsiteUnmit	0.02	1.39	0.07	0.02	250.24	0.02	25.05	0.02	1611	0.00	0.25	1.91	25.41	26.72	0.02	0.00	0.02	0.00	0.04	4662	0.09	0.73
2024	MDAB	T7	OnsiteUnmit	2024T7OnsiteUnmit	0.02	1.37	0.07	0.02	250.24	0.02	25.05	0.02	1608	0.00	0.25	1.90	25.43	26.80	0.02	0.00	0.02	0.00	0.04	4636	0.09	0.73
2023	MDAB	LDA-LDT	OnsiteUnmit	2023LDA-LDTOnsiteUnmit	0.01	0.07	0.92	0.00	250.14	0.00	25.02	0.00	304	0.00	0.01	2.67	0.31	3.78	0.00	0.00	0.00	0.00	0.00	77	0.08	0.04
2024	MDAB	LDA-LDT	OnsiteUnmit	2024LDA-LDTOnsiteUnmit	0.01	0.06	0.85	0.00	250.14	0.00	25.02	0.00	297	0.00	0.01	2.54	0.29	3.53	0.00	0.00	0.00	0.00	0.00	75	0.08	0.03
2023	MDAB	T6	OnsiteUnmit	2023T6OnsiteUnmitIndustrial	0.01	0.89	0.05	0.01	250.18	0.01	48.36	0.01	1058	0.00	0.17	0.23	12.81	7.57	0.02	0.00	0.02	0.00	0.02	2262	0.01	0.36
2024	MDAB	T6	OnsiteUnmit	2024T6OnsiteUnmitIndustrial	0.01	0.91	0.05	0.01	250.18	0.01	48.36	0.01	1055	0.00	0.17	0.22	12.76	7.53	0.02	0.00	0.02	0.00	0.02	2261	0.01	0.36

CalEEMod Material Fugitive Dust Emission Factors- Unmitigated and Uncontrolled Fugitive Dust

Calculation Details in CalEEMod Users Guide, Appendix A

Paving ROG EF
Grading PM10 EF
Grading PM2.5 EF
Bulldozing PM10 EF
Bulldozing PM2.5 EF
Truck loading PM10 EF
Truck loading PM2.5 EF
Demo PM10 EF
Demo PM2.5 EF

2.6200	lbs/acre
1.0605	lbs/acre
0.1145	lbs/acre
0.7528	lbs/hr
0.4138	lbs/hr
0.000467	lb/ton
0.000071	lb/ton
0.0235	lb/ton
0.0036	lb/ton

CalEEMod (no mitigation)	
CalEEMod (no mitigation)	

Water and Wastewater Electricity Intensity (kWhr/MG) - Table 9.2 CalEEMod Appendix D

District	Supply Water	Treat Water	Distribute Water	Total Outdoor Use
Kern County APCD	9727	111	1272	11110

Туре	Phase	PM10	PM2.5	PM10 D	PM2.5 D
	Phase1	0.00	0.00	0.00	0.00
	Phase2	0.00	0.00	0.00	0.00
	Phase3	0.00	0.00	0.00	0.00
	Phase4	0.00	0.00	0.00	0.00
	Phase5	0.00	0.00	0.00	0.00
Offsite	Phase6	0.00	0.00	0.00	0.00
	Phase7	0.00	0.00	0.00	0.00
	Phase8	0.00	0.00	0.00	0.00
	Phase9	0.00	0.00	0.00	0.00
	Phase10	0.00	0.00	0.00	0.00
	Phase11	0.00	0.00	0.00	0.00
	Phase1	0.00	0.00	0.00	0.00
	Phase2	0.00	0.00	0.00	0.00
	Phase3	0.00	0.00	0.00	0.00
	Phase4	0.00	0.00	0.00	0.00
	Phase5	0.00	0.00	8.64	1.67
Onsite	Phase6	0.00	0.00	0.00	0.00
	Phase7	0.00	0.00	0.00	0.00
	Phase8	0.00	0.00	0.00	0.00
	Phase9	0.00	0.00	0.00	0.00
	Phase10	0.00	0.00	0.00	0.00
	Phase11	0.00	0.00	0.00	0.00
	Phase1	0.05	0.05	0.00	0.00
	Phase2	0.23	0.21	0.00	0.00
	Phase3	0.09	0.08	0.00	0.00
	Phase4	0.03	0.02	0.00	0.00
	Phase5	1.81	1.66	0.00	0.00
Offroad	Phase6	0.08	0.07	0.00	0.00
	Phase7	0.09	0.08	0.00	0.00
	Phase8	#N/A	#N/A	#N/A	#N/A
	Phase9	#N/A	#N/A	#N/A	#N/A
	Phase10	#N/A	#N/A	#N/A	#N/A
	Phase11	#N/A	#N/A	#N/A	#N/A
	Phase1	0.00	0.00	0.00	0.00
	Phase2	0.00	0.00	0.00	0.00
	Phase3	0.00	0.00	0.00	0.00
	Phase4	0.00	0.00	0.00	0.00
Faralassa Osaita	Phase5	0.00	0.00	43.47	4.35
Employee Onsite	Phase6	0.00	0.00	0.00	0.00
	Phase7	0.00	0.00	0.00	0.00
	Phase8	0.00	0.00	0.00	0.00
	Phase9	0.00	0.00	0.00	0.00
	Phase10	0.00	0.00	0.00	0.00
	Phase11	0.00	0.00	0.00	0.00
	Phase1	0.00	0.00	0.00	0.00
	Phase2	0.00	0.00	0.00	0.00

	Phase3	0.00	0.00	0.00	0.00
	Phase4	0.00	0.00	0.00	0.00
	Phase5	0.01	0.01	0.79	0.13
Employee Offsite	Phase6	0.00	0.00	0.00	0.00
	Phase7	0.00	0.00	0.00	0.00
	Phase8	0.00	0.00	0.00	0.00
	Phase9	0.00	0.00	0.00	0.00
	Phase10	0.00	0.00	0.00	0.00
	Phase11	0.00	0.00	0.00	0.00
	Phase1	0.00	0.00	0.19	0.10
	Phase2	0.00	0.00	1.95	0.91
	Phase3	0.00	0.00	0.54	0.30
	Phase4	0.00	0.00	0.00	0.00
	Phase5	0.00	0.00	0.00	0.00
Grade/Pave/Demo	Phase6	0.00	0.00	0.00	0.00
	Phase7	0.00	0.00	0.00	0.00
	Phase8	#N/A	#N/A	#N/A	#N/A
	Phase9	#N/A	#N/A	#N/A	#N/A
	Phase10	#N/A	#N/A	#N/A	#N/A
	Phase11	#N/A	#N/A	#N/A	#N/A
	Phase1	#REF!	#REF!	#REF!	#REF!
	Phase2	#REF!	#REF!	#REF!	#REF!
	Phase3	#REF!	#REF!	#REF!	#REF!
	Phase4	#REF!	#REF!	#REF!	#REF!
	Phase5	#REF!	#REF!	#REF!	#REF!
Concrete Batching	Phase6	#REF!	#REF!	#REF!	#REF!
	Phase7	#REF!	#REF!	#REF!	#REF!
	Phase8	#REF!	#REF!	#REF!	#REF!
	Phase9	#REF!	#REF!	#REF!	#REF!
	Phase10	#REF!	#REF!	#REF!	#REF!
	Phase11	#REF!	#REF!	#REF!	#REF!
		13	14	15	16

Summary of Total Emissions - Bullhead Solar Operations

By Year

		Tons per year										Metric tons per year									
Year	ROG	NOX	CO	PM10 E	PM10 D	PM 10 T	PM2.5 E	PM2.5 D	PM2.5 T	SO2	CO2	CH4	N2O	HFC	CO2e						
2024	0	1	1	0	8	8	0	1	1	0	238	0	0	0	241						
Total	0	1	1	0	8	8	0	1	1	0	238	0	0	0	241						
By Phase																					

					Tons pe	r year						Metric tons per year							
Phase	ROG	NOX	CO	PM10 E	PM10 D	PM 10 T	PM2.5 E	PM2.5 D	PM2.5 T	SO2	CO2	CH4	N2O	CO2e					
Phase1	0	0	0	0	7	7	0	1	1	0	99	0	0	100					
Phase2	0	1	1	0	0	0	0	0	0	0	109	0	0	109					
Phase3	0	0	0	0	0	0	0	0	0	0	9	0	0	9					
Phase4	0	0	0	0	1	1	0	0	0	0	16	0	0	17					
Phase5	0	0	0	0	0	0	0	0	0	0	5	0	0	5					
Total	0	1	1	0	8	8	0	1	1	0	238	0	0	241					

Normal Operations
Panel Washing
Electricity from Water Demand
Water Hauling
Potable Water Delivery

Source		Metric ton	s per year			
	CO2	CH4	N2O	CO2e		
Daily Operations	99	0	0	100		
Periodic Panel Washing	109	0	0	109		
Water Demand	9	0	0	9		
Water Hauling	16	0	0	17		
Potable Water Delivery	5	0	0	5		
Amortized Construction	450	0	0	462		
Total yearly emissions	689	0	0	702		
Displaced grid energy (avg year)	0	0	0	30,788		
	689	0	0	-30,085		

Summary of Total Fuel Consumption

Year	Gallons (diesel/gasoline)					
2024	23,116					
Total	23,116					

Summary of Total kWh Usage

Year	kWh
2024	51,246
Total	51,246

	Total MTCO2e											
	CO2	CH4	N2O	CO2e								
Total Operational Emissions	8,346	0.3	0.2	8,423								
Total Construction Emissions	15,752	0.3	1.4	16,162								
Total Project Emissions	24,098	0.6	1.6	24,585								
Total Displaced Grid Energy				1,077,571								
Displaced Grid Energy				-1,052,986								

notes:

^{1.} To conservatively assume a worst-case scenario, it is assumed that operations would be the same year as Construction. The emission factors for the year 2024 are higher than 2025.

Offroad Calculations

						2024									6									
Codo	Fauia	Carriamont arrabar	hus/day	DT Lood CMOD	LID Din LID LE Fried Connect		Pounds per day				Ton	s per year			Metric tons per year			year 💮						
Code	Equip	Equipment number	nrs/day	RT Load CMOD	HP Bin HP LF Fuel Concat	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D SO	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D	602 C	02 (CH4 N2O	CO2e	Gal per year
Phase2	Pressure Washer	66	8	Pressure Washers	25 13 0.3 Diesel Pressure Washers25	1.3	16.0	###	0.4	0.4		0.0	0.1	0.7	0.7	0.0	0.0			0.0 109	9.11	0.0 0.0	109.5	10686
Phase1	Generator Sets	1	0.14	Generator Sets	250 250 0.7 Diesel Generator Sets25	0.0	0.2	0.2	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0 5.	37	0.0 0.0	5.4	526
	1/1/2024								Pound	ds per day	/					Ton	s per year				Metric	tons per y	/ear	
	4/1/2024				Phase	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D SO	2 ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	602 C	02 (CH4 N2O	CO2e	Gal per year
	66				Phase1	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 5	.4	0.0 0.0	5.4	526.2
					Phase2	1.3	16.0	###	0.4	0.4	0.0	0.0 0.0	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.0 10	9.1	0.0 0.0	109.5	10686.1
					Phase3	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.0	0.0 0.0	0.0	0.0
					Phase4	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.0	0.0 0.0	0.0	0.0
					Phase5	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.0	0.0 0.0	0.0	0.0

Appendix B: Air Quality and Greenhouse Gas Mass Emission Modeling

Employee Commute Trips

										2024												6							
Code	Air Daoin	Vehicles/	Single	Speed	Miles/day	Vahiala	Vahiala Tura	Fuel Connect				Pound	s per day							Tons	per year				Metr	ic tons	per year	Gal per	П
	Air Basin	day	Trips/day			Vehicle	Vehicle Type	ruei Concat	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D S	O2 F	ROG	NOX	CO I	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4 N	20 CO2e	year	
Phase1	MDAB	15	30		795	Employee	LDA-LDTOffsite	Gas LDA-LDTOffsite	0.2	0.1	1.7	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.0	87.0	0.0 0	0.0 87.6	9906	
Phase1	MDAB	15	30	Unmit	30	Onsite Employee	LDA-LDTOnsite	Gas LDA-LDTOnsiteUnmit	0.2	0.0	0.3	0.0	0.0	36.8	3.7	0.0	0.0	0.0	0.1	0.0	0.0	6.7	0.7	0.0	4.1	0.0 0	1.0 4.2	464	

Pounds per day										Tons per year										Metric tons per year				
Phase	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4	N2O	CO2e	year			
Phase1	0.4	0.2	2.0	0.0	0.0	37.1	3.7	0.0	0.1	0.0	0.4	0.0	0.0	6.8	0.7	0.0	91.0	0.0	0.0	91.9	10370.0			
Phase2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Phase3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Phase4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Phase5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

Bullhead Solar Project Appendix B: Air Quality and Greenhouse Gas Mass Emission Modeling

Vendor and Water Truck Trips

			<u>Location</u>														2024										
								g/trip STREX and HTSK	13	14	15	16	18	17	19	20									21 22	2 23	
								g/mile RUNEX, PMBW,	2	3	4	5	7	6	8	9									10 11	1 12	
ode	Vehicles	Single	Cnood	Miles/dev	Vahiala	Vahiala Tura	Fuel	Fuel			Pou	nds pei	r day							Toı	ns per y	ear			Metric t	tons per yea	r Ga
oue	/ day	Trips/day	Speed	Miles/day	Vehicle	Vehicle Type	Fuel	(gal/day)	ROG	NOX	CO)M1(PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	CO I	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO ₂ CH	14 N2O CO2	∠e pe
nase4	9	18	Unmit	18	Onsite Water Truck	T6Onsite	Diesel	T6OnsiteUnmit	0.0	0.5	0.3	0.0	0.0	22.1	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.1	0.0	5.4 0.	0.0 5.7	7 53
ase4	9	18		72	Offsite Water Truck	T6offsite	Diesel	T6offsite	0.0	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.6 0.	0 0.0 11.	.1 104
nase5	1	2	Unmit	2	Onsite Vendor Truck	T7Onsite	Diesel	T7OnsiteUnmit	0.0	0.1	0.1	0.0	0.0	2.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.6 0.	0.0 0.7	7 64
hase5	1	2		46	Offsite Vendor Truck	T7offsite	Diesel	T7offsite	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3 0.	0 0.0 4.5	5 42
											Pou	nds pei	r day							Toı	ns per y	ear			Metric t	tons per yea	ır Ga
								Phase	ROG	NOX	СО	'M10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D			14 N2O CO2	
								Phase1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.	0.0 0.0) O./
								Phase2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.	0.0 0.0	0.0
								Phase3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.	0.0 0.0	0.0
								Phase4	0.0	1.2	0.6	0.0	0.0	22.1	2.2	0.0	0.0	0.1	0.0	0.0	0.0	1.0	0.1	0.0	16.0 0.	0 0.0 16.	.8 ###
								Phase5	0.0	0.4	0.2	0.0	0.0	2.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	5.0 0.	0 0.0 5.2	2 487

Energy Displacement Emission Calculations

Assumes opening year 2025
Project life of 35 years runs through 2059
starting ponit is eGrid 2019 for CAMX region
Future years estimates based on eGrid 2019 power mix and RPS goals per SB 1020

1) Future year emission factors

CAMX emission factors 2019

453.2 Co2eGrid 20190.033 Ch4eGrid 20190.004 N2oeGrid 2019455.2 CO2ecalculated

https://www.epa.gov/energy/emissions-generation-resource-integrated-database-egrid

CAMX energy mix 2019

type	%	for EF
Coal	3.80	non-renewable
Oil	0.03	non-renewable
Gas	42.25	non-renewable
Other Fossil	0.72	non-renewable
Nuclear	7.91	zero-carbon
Hydro	16.12	zero-carbon
Biomass	2.78	zero-carbon
Wind	7.01	zero-carbon
Solar	15.30	zero-carbon
Geo- thermal	3.79	zero-carbon
Other unknown/ purchased fuel	0.29	non-renewable

	2	2019 CAMX	2035 ((RPS = 90%)	2040 (R	PS = 95%)	2045 (RI	PS = 100%)
	%	EF (lb/MWh)	%	EF (lb/MWh)	%	EF (lb/MWh	%	EF (lb/MWh)
	70	CO2e	70	CO2e	70	CO2e	70	CO2e
Zero-carbon	52.90%	0	90.00%	0	95.00%	0	100.000%	0
Non-renewable	47.10%	966.4	10.00%	966.4	5.00%	966.4	0.00%	966.4
Total	100.00%	455.2	100.00%	96.6	100.00%	48.3	100.00%	0

Summary of Efs

2019	455.2	lbs CO2e/MWH
2035	96.6	lbs CO2e/MWH
2040	48.3	lbs CO2e/MWH
2045	0.0	lbs CO2e/MWH

Energy Displacement Emission Calculations

2) Displaced energy calculations

870,000 MWh/year

	EF - CO2e		MTCO2e
year	lbs/MWh	MWh generated	displaced
2020	433		
2021	410		
2022	388		
2023	366		
2024	343		
2025	321	870,000	126,579
2026	298	870,000	117,735
2027	276	870,000	108,891
2028	254	870,000	100,047
2029	231	870,000	91,203
2030	209	870,000	82,359
2031	186	870,000	73,515
2032	164	870,000	64,671
2033	141	870,000	55,827
2034	119	870,000	46,983
2035	97	870,000	38,138
2036	87	870,000	34,325
2037	77	870,000	30,511
2038	68	870,000	26,697
2039	58	870,000	22,883
2040	48	870,000	19,069
2041	39	870,000	15,255
2042	29	870,000	11,442
2043	19	870,000	7,628
2044	10	870,000	3,814
2045	0	870,000	0
2046	0	870,000	0
2047	0	870,000	0
2048	0	870,000	0
2049	0	870,000	0
2050	0	870,000	0
2051	0	870,000	0
2052	0	870,000	0
2053	0	870,000	0
2054	0	870,000	0
2055	0	870,000	0
2056	0	870,000	0
2057	0	870,000	0
2058	0	870,000	0
2059	0	870,000	0

35

30,450,000 1,077,571 MT displaced, total

126,579 MT displaced, opening year 30,788 MT displaced per year, on average

Energy Use

													2024										6
Code	Air Basin	Floctricity	Electricity				Pounds	per day							Tons p	er year				Metr	ic tons per yea	r	kWh per
Code	All Dasili	-	Domand	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	CO	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4 N2O	CO2e	year
Phase1	MDAB	11	0.0																	2.7	0.0 0.0	2.7	11,424
Phase3	MDAB	40	0.1																	9.2	0.0 0.0	9.2	39,822

						Pounds	per day							Tons p	er year				Metr	ic tons per year	kWh per	
		Phase	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4 N2O CO2	e year	
Total Water Demand (ac-ft)	11	WSA (ICF, 1Phase1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0 0.0 2.7	11,424	
Gallons	3,584,361	Phase2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0 0.0	0	
MG	4	Phase3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.2	0.0 0.0 9.2	39,822	
kWh	39,822	Phase4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0 0.0	0	
MWh	40	Phase5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 0.0 0.0	0	

Energy Use for Unrefrigerated Warehouse-No Rail (kWhr/sqft./year)

T24 Electricity 0.9 Lighting Electricity 1.48

Assumptions

General Assumptions

lbs/gram0.002204623 Standardmt/gram0.000001 Standardmt/lbs0.000453592 Standardton/lbs0.0005 StandardGallons per acre-foot3.26E+05 Standard

lbs CO2 per gallon of diesel22.5 Climate Registry 2017lbs CO2 per gallon of gas19.4 Climate Registry 2017

 CH4 GWP
 25 AR4

 N2O GWP
 298 AR4

CO2 lb/MWh 512 SCE 2020 EF https://www.edison.com/home/sustainability/sustainability-report.html

CH4 lb/MWh

0 SCE rate is CO2e - CH4 already included

N2O lb/MWh

0 SCE rate is CO2e - N2O already included

Single trips per vehicle 2 STREX, HTSK, RUNLS calculations for routine vehicles assume 2 single trips per vehicle/day

Employee commute distance (paved)

26.5 miles/trip

Average employee travel distance according to the TIS from 6/11/2021

Draft Water Supply Assessment Technical Report for BigBeau Solar Project, April 2019.

Operational Water Truck Trip (paved)

4 miles

Potential Locations include 125th Street West and Rosamond Blvd, or 120th Street

West and Rosamond Blvd. Approximately 5.6 miles and 5.1 miles from the project site,

respectively.

Potable Water Delivery distance (paved)

Distance Unpaved

23 miles

1 miles/trip

kw to mw 1000

Offroad Equipment Match

Eqpt Description (Valentine) CalEEMod Equipment Name

Pressure Washer Pressure Washers

Vehicle Match

<u>Onsite</u>

Onsite Water Truck T6Onsite
Onsite Vendor Truck T7Onsite
Onsite Employee LDA-LDTOnsite

Offsite Vehicles

Offsite Vendor Truck T7offsite
Employee LDA-LDTOffsite
Offsite Water Truck T6offsite

Annual Operational Schedule

Phase	Code	Start Date	End Date	Working Days	Days/Week	2022
Normal Operations	Phase1	1/1/2024	12/31/2024	365	7	365
Panel Washing	Phase2	1/1/2024	4/1/2024	91	7	91
Electricity from Water Demand	Phase3	1/1/2024	12/31/2024	365	7	365
Water Hauling	Phase4	1/1/2024	4/1/2024	91	7	91
Potable Water Delivery	Phase5	1/1/2024	2/22/2024	52	7	52

Construction Equipment Emission Factors - CY 2024

Source: CalEEMod version 2022, Appendix G - Table G-11 (Unmitigated)

			1	2 3	4	5	6		3		1	
Equipment Type	Year	Concatenate	НР	ROG	NOX	со	PM10	PM2.5	SO2	CO2	CH4	N2O
Aerial Lifts	2024	2024Aerial Lifts0	0	0.838	6.398	4.045	0.248	0.228	0.012	848.447	0.034	0.007
Aerial Lifts	2024	2024Aerial Lifts25	25	0.158	2.886	3.111	0.022	0.020	0.005	586.903	0.024	0.005
Aerial Lifts	2024	2024Aerial Lifts50	50	0.110	1.642	3.167	0.037	0.034	0.005	527.849	0.021	0.004
Aerial Lifts	2024	2024Aerial Lifts75	75	0.093	1.438	3.176	0.019	0.017	0.005	527.988	0.021	0.004
Aerial Lifts	2024	2024Aerial Lifts100	100	0.086	0.572	2.857	0.024	0.022	0.005	527.719	0.021	0.004
Aerial Lifts	2024	2024Aerial Lifts175	175	0.081	0.684	0.968	0.009	0.009	0.005	527.713	0.021	0.004
Aerial Lifts	2024	2024Aerial Lifts300	300	0.065	0.263	0.958	0.009	0.008	0.005	527.713	0.021	0.004
Air Compressors	2024	2024Air Compressors0	0	0.591	4.417	2.622	0.183	0.169	0.008	569.937	0.023	0.005
Air Compressors	2024	2024Air Compressors25	25	0.581	3.865	4.881	0.136	0.125	0.007	568.361	0.023	0.005
Bore/Drill Rigs	2024	2024Bore/Drill Rigs0	0	0.843	6.437	3.804	0.242	0.223	0.011	851.027	0.035	0.007
Bore/Drill Rigs	2024	2024Bore/Drill Rigs25	25	0.615	4.201	4.375	0.221	0.204	0.006	598.652	0.024	0.005
Bore/Drill Rigs	2024	2024Bore/Drill Rigs50	50	0.222	3.304	3.296	0.160	0.147	0.005	518.484	0.021	0.004
Bore/Drill Rigs	2024	2024Bore/Drill Rigs75	75	0.165	1.952	3.277	0.072	0.067	0.005	521.434	0.021	0.004
Bore/Drill Rigs	2024	2024Bore/Drill Rigs100	100	0.126	1.041	2.960	0.048	0.044	0.005	532.059	0.022	0.004
Bore/Drill Rigs	2024	2024Bore/Drill Rigs175	175	0.116	1.118	1.058	0.036	0.033	0.005	524.922	0.021	0.004
Bore/Drill Rigs	2024	2024Bore/Drill Rigs300	300	0.099	0.769	0.982	0.028	0.025	0.005	522.319	0.021	0.004
Bore/Drill Rigs	2024	2024Bore/Drill Rigs600	600	0.078	0.560	0.967	0.022	0.020	0.005	532.561	0.022	0.004
Bore/Drill Rigs	2024	2024Bore/Drill Rigs750	750	0.169	3.854	0.991	0.089	0.082	0.005	526.939	0.021	0.004
Cement and Mortar Mixers	2024	2024Cement and Mortar Mixers0	0	0.554	4.202	3.257	0.164	0.151	0.009	570.167	0.023	0.005
Concrete/Industrial Saws	2024	2024Concrete/Industrial Saws0	0	0.593	4.531	2.447	0.169	0.156	800.0	594.363	0.024	0.005
Concrete/Industrial Saws	2024	2024Concrete/Industrial Saws25	25	0.470	3.744	4.381	0.117	0.108	0.007	574.905	0.023	0.005
Cranes	2024	2024Cranes0	0	1.235	4.864	5.722	0.382	0.351	0.005	586.607	0.024	0.005
Cranes	2024	2024Cranes25	25	2.026	5.983	7.537	0.603	0.555	0.005	592.536	0.024	0.005
Cranes	2024	2024Cranes50	50	1.331	9.967	4.582	0.938	0.863	0.005	531.141	0.022	0.004
Cranes	2024	2024Cranes75	75	0.478	4.283	3.851	0.269	0.247	0.005	526.264	0.021	0.004
Cranes	2024	2024Cranes100	100	0.394	3.790	3.399	0.205	0.188	0.005	528.401	0.021	0.004
Cranes	2024	2024Cranes175	175	0.294	3.150	1.684	0.131	0.121	0.005	527.567	0.021	0.004
Cranes	2024	2024Cranes300	300	0.210	2.131	1.680	0.086	0.079	0.005	527.532	0.021	0.004
Cranes	2024	2024Cranes600	600	0.387	3.917	2.885	0.194	0.178	0.005	527.321	0.021	0.004
Cranes	2024	2024Cranes750	750	0.574	6.840	4.895	0.303	0.279	0.005	527.566	0.021	0.004
Crawler Tractors	2024	2024Crawler Tractors25	25	1.777	5.035	6.765	0.472	0.434	0.005	583.519	0.024	0.005
Crawler Tractors	2024	2024Crawler Tractors50	50	1.948	15.424	6.314	1.131	1.040	0.005	527.171	0.021	0.004
Crawler Tractors	2024	2024Crawler Tractors75 2024Crawler Tractors100	75	0.500	4.305	3.807	0.328	0.301	0.005	528.713	0.021	0.004
Crawler Tractors	2024		100	0.327	3.049 3.391	3.228	0.171	0.157	0.005	527.599	0.021	0.004 0.004
Crawler Tractors	2024	2024Crawler Tractors175	175	0.308		1.820	0.140	0.129	0.005	527.475	0.021	
Crawler Tractors	2024	2024Crawler Tractors300 2024Crawler Tractors600	300	0.199 0.449	1.935	1.463 2.736	0.076 0.202	0.070 0.186	0.005	527.935	0.021 0.021	0.004 0.004
Crawler Tractors	2024 2024	2024Crawler Tractors000 2024Crawler Tractors750	600	0.449	5.569 5.136	1.502	0.202	0.100	0.005 0.005	524.584 521.504	0.021	0.004
Crawler Tractors Dumpers/Tenders	2024	2024Crawier Tractors/30 2024Dumpers/Tenders0	750 0	0.287	5.126 4.368	2.359	0.128	0.118	0.003	531.504 573.018	0.022	0.004
Excavators	2024	2024Excavators0	\dashv $\ddot{\circ}$	0.371	6.483	3.580	0.103	0.130	0.007	845.871	0.023	0.003
Excavators	2024	2024Excavators25	25	0.415	3.501	4.197	0.231	0.231	0.011	587.317	0.034	0.007
Excavators	2024	2024Excavators23 2024Excavators50	50	0.413	6.389	4.102	0.559	0.110	0.005	527.683	0.024	0.003
Excavators	2024	2024Excavators75	75	0.700	2.170	3.455	0.339	0.086	0.005	525.352	0.021	0.004
Excavators	2024	2024Excavators100	100	0.207	1.338	3.433	0.094	0.061	0.005	527.999	0.021	0.004
Excavators	2024	2024Excavators175	175	0.172	1.138	1.110	0.000	0.001	0.005	528.451	0.021	0.004
Excavators	2024	2024Excavators300	300	0.141	0.825	1.046	0.037	0.026	0.005	527.003	0.021	0.004
Excavators	2024	2024Excavators600	600	0.121	2.047	1.567	0.028	0.026	0.005	530.825	0.021	0.004
Excavators	2024	2024Excavators750	750	0.193	2.359	0.992	0.081	0.073	0.005	533.664	0.022	0.004
Forklifts	2024	2024Excavators730 2024Forklifts25		0.692	4.035	5.083	0.021	0.020	0.005	587.146	0.022	0.004
Forklifts	2024	2024F01kii1t525 2024Forklifts50	25 50	1.714	4.035 13.487	5.647	1.051	0.187	0.005	524.509	0.024	0.003
Forklifts	2024	2024Forklifts75	75	0.292	2.751	3.615	0.157	0.967	0.005	524.509	0.021	0.004
Forklifts	_	2024Forklifts100			1.870		0.157	0.145	0.005	527.040 527.512	0.021	
Forklifts	2024		100	0.225		3.173						0.004
	2024	2024Forklifts175	175	0.191	1.580	1.208	0.060	0.055	0.005	528.244	0.021	0.004
Forklifts Forklifts	2024	2024Forklifts300	300	0.236	1.905	1.252	0.072	0.066	0.005	531.099	0.022	0.004
Forklifts	2024	2024Forklifts600	600	0.236	1.905	1.252	0.072	0.066	0.005	531.099	0.022	0.004
Forklifts Congretor Sets	2024	2024Forklifts750	750	0.107	2.412	1.032	0.022	0.021	0.005	527.640	0.021	0.004
Generator Sets	2024	2024Generator Sets0	0	0.546	4.373	2.881	0.180	0.166	0.008	568.315	0.023	0.005

Canaratar Sata	2024	2024Congrator CatalE	1 25	0.202	2 502	2 700	0.100	0.000	0.007	FC0 227	0.022	0.005
Generator Sets	2024 2024	2024Generator Sets25 2024Graders0	25	0.393	3.583	3.788	0.108	0.099	0.007	568.327	0.023	0.005
Graders	2024	2024Graders0 2024Graders25	0	1.988	6.089	7.740	0.734	0.675	0.005	587.012	0.024	0.005
Graders		2024Graders25 2024Graders50	25	1.965	5.318	7.482	0.547	0.504	0.005	586.703	0.024	0.005
Graders	2024 2024		50	1.532	11.942	5.167	1.012	0.931	0.005	548.264	0.022	0.004
Graders		2024Graders75 2024Graders100	75 100	0.693	5.479	4.200	0.416	0.382	0.005	523.605	0.021	0.004
Graders	2024		100	0.361	3.176	3.405	0.175	0.161	0.005	530.170	0.022	0.004
Graders	2024	2024Graders175	175	0.266	2.909	1.262	0.097	0.089	0.005	527.899	0.021	0.004
Graders	2024	2024Graders300	300	0.295	3.105	1.098	0.116	0.106	0.005	524.569	0.021	0.004
Graders	2024 2024	2024Graders600 2024Graders750	600	0.295	3.105	1.098	0.116	0.106	0.005	524.569	0.021	0.004
Graders Off Highway Tractors	2024		750	0.404	5.913	1.980	0.169	0.156	0.005	527.817	0.021	0.004
Off-Highway Tractors	2024	2024Off-Highway Tractors0 2024Off-Highway Tractors25	0	4.056	7.675	11.147	1.055	0.971	0.005	586.526	0.024	0.005
Off-Highway Tractors	2024	2024Off-Highway Tractors50	25	0.594	3.853	4.749	0.174	0.160	0.005	585.564	0.024	0.005
Off-Highway Tractors	2024	2024Off-Highway Tractors75	50 75	0.332 0.278	3.056 2.839	3.748	0.163	0.150	0.005	527.719 529.217	0.021	0.004
Off-Highway Tractors Off-Highway Tractors	2024	20240ff-Highway Tractors100	100	0.278	2.839 1.457	3.604	0.173 0.069	0.159 0.064	0.005 0.005	529.217	0.021	0.004
Off-Highway Tractors	2024	2024Off-Highway Tractors175	175	0.179	1.437	3.115 1.157	0.069	0.064	0.005	527.441	0.021 0.021	0.004 0.004
Off-Highway Tractors	2024	2024Off-Highway Tractors300	300	0.180	0.873	1.157	0.033	0.031	0.005	526.249	0.021	0.004
Off-Highway Tractors	2024	2024Off-Highway Tractors600	600	0.131	1.713	1.081	0.030	0.027	0.005	524.222	0.021	0.004
Off-Highway Tractors	2024	2024Off-Highway Tractors750	750	0.248	3.628	1.296	0.088	0.090	0.005	524.222	0.021	0.004
Off-Highway Trucks	2024	2024Off-Highway Trucks0	0	2.460	5.694	8.624	0.639	0.588	0.005	586.605	0.021	0.004
Off-Highway Trucks	2024	2024Off-Highway Trucks25			3.953							
Off-Highway Trucks	2024	2024Off-Highway Trucks25 2024Off-Highway Trucks50	25 50	0.591	3.933 1.634	5.246	0.176	0.162	0.005	581.963	0.024	0.005
Off-Highway Trucks	2024	2024Off-Highway Trucks75	75	0.234	3.109	3.949	0.025	0.023	0.005	530.146	0.022	0.004
Off-Highway Trucks	2024	2024Off-Highway Trucks75	100	0.363	1.542	3.986	0.204	0.188	0.005	529.249	0.021	0.004
Off-Highway Trucks	2024	20240ff-Highway Trucks100 2024Off-Highway Trucks175	175	0.229	1.342	3.340	0.073	0.067	0.005	526.764	0.021	0.004
= -	2024	20240ff-Highway Trucks300	4	0.204		1.280	0.055	0.051	0.005	525.991	0.021	0.004
Off-Highway Trucks	2024	20240ff-Highway Trucks600	300 600	0.183	1.236	1.195	0.044	0.041	0.005	527.763 527.454	0.021	0.004
Off-Highway Trucks		<u> </u>	4	0.259	2.069	1.655	0.079	0.073	0.005		0.021	0.004
Off-Highway Trucks Other Construction Equipment	2024 2024	2024Off-Highway Trucks750 2024Other Construction Equipment0	750 0	0.191 0.822	3.225 6.236	1.202 4.875	0.060	0.056 0.222	0.005	528.577 848.428	0.021	0.004 0.007
Other Construction Equipment Other Construction Equipment	2024	2024Other Construction Equipment05	4	0.822	4.496	5.016	0.242	0.222	0.013 0.005		0.034	0.007
Other Construction Equipment Other Construction Equipment	2024	2024Other Construction Equipment50	25 50	0.825	7.684	4.274	0.304 0.578	0.280	0.005	590.090 519.506	0.024 0.021	0.003
Other Construction Equipment Other Construction Equipment	2024	2024Other Construction Equipment75	75	0.839	3.241	3.563	0.378	0.332	0.005	528.454	0.021	0.004
Other Construction Equipment Other Construction Equipment	2024	2024Other Construction Equipment100	100		2.544							
Other Construction Equipment Other Construction Equipment	2024	2024Other Construction Equipment175	175	0.264	2.242	3.158 1.337	0.132 0.087	0.121 0.080	0.005 0.005	525.865 528.722	0.021 0.021	0.004 0.004
Other Construction Equipment Other Construction Equipment	2024	2024Other Construction Equipment300	300	0.210	1.563	1.305	0.057	0.054	0.005	528.223	0.021	0.004
Other Construction Equipment Other Construction Equipment	2024	2024Other Construction Equipment600	600	0.163 0.172	1.790	1.100	0.059	0.054	0.005	528.615	0.021	0.004
Other Construction Equipment Other Construction Equipment	2024	2024Other Construction Equipment750	750	0.172	2.901	1.002	0.002	0.037	0.005	527.547	0.021	0.004
Other General Industrial Equipment	2024	2024Other General Industrial Equipment0	0	0.137	6.401	3.899	0.033	0.049	0.003	848.062	0.021	0.004
Other General Industrial Equipment	2024	2024Other General Industrial Equipment25	1	0.820	3.856	4.776	0.242	0.223	0.011	588.151	0.034	0.007
Other General Industrial Equipment	2024	2024Other General Industrial Equipment50	25 50	0.343	2.404	3.618	0.103	0.132	0.005	527.848	0.024	0.003
Other General Industrial Equipment	2024	2024Other General Industrial Equipment75	75	0.241	3.661	3.742	0.255	0.235	0.005	529.013	0.021	0.004
Other General Industrial Equipment	2024	2024Other General Industrial Equipment100	100	0.434	1.585	3.219	0.083	0.233	0.005	528.382	0.021	0.004
Other General Industrial Equipment	2024	2024Other General Industrial Equipment175	175	0.208	1.711	1.176	0.057	0.052	0.005	528.768	0.021	0.004
Other General Industrial Equipment	2024	2024Other General Industrial Equipment300	300	0.136	0.947	1.089	0.037	0.032	0.005	528.188	0.021	0.004
Other General Industrial Equipment	2024	2024Other General Industrial Equipment600	600	0.095	0.516	1.184	0.023	0.022	0.005	528.187	0.021	0.004
Other General Industrial Equipment	2024	2024Other General Industrial Equipment750	750	0.152	3.283	1.035	0.055	0.050	0.005	528.190	0.021	0.004
Other Material Handling Equipment	2024	2024Other Material Handling Equipment0	0	0.784	3.698	5.475	0.144	0.133	0.005	586.799	0.024	0.005
Other Material Handling Equipment	2024	2024Other Material Handling Equipment25	25	0.954	4.637	5.719	0.321	0.295	0.005	590.437	0.024	0.005
Other Material Handling Equipment	2024	2024Other Material Handling Equipment50	50	0.469	4.147	4.063	0.326	0.300	0.005	526.052	0.021	0.004
Other Material Handling Equipment	2024	2024Other Material Handling Equipment75	75	0.181	1.983	3.425	0.074	0.068	0.005	528.694	0.021	0.004
Other Material Handling Equipment	2024	2024Other Material Handling Equipment100	100	0.245	1.964	3.320	0.107	0.098	0.005	527.725	0.021	0.004
Other Material Handling Equipment	2024	2024Other Material Handling Equipment175	175	0.244	2.118	1.185	0.087	0.080	0.005	528.003	0.021	0.004
Other Material Handling Equipment	2024	2024Other Material Handling Equipment300	300	0.176	1.465	1.270	0.054	0.050	0.005	528.603	0.021	0.004
Other Material Handling Equipment	2024	2024Other Material Handling Equipment600	600	0.333	2.663	1.125	0.138	0.127	0.005	527.804	0.021	0.004
Other Material Handling Equipment	2024	2024Other Material Handling Equipment750	750	0.056	2.270	0.941	0.018	0.017	0.005	527.804	0.021	0.004
Pavers	2024	2024Pavers0	0	0.857	6.552	3.539	0.246	0.226	0.011	859.487	0.035	0.007
Pavers	2024	2024Pavers25	25	0.948	4.191	4.942	0.278	0.256	0.005	587.664	0.024	0.005
Pavers	2024	2024Pavers50	50	0.932	6.997	4.049	0.675	0.621	0.005	524.123	0.021	0.004
Pavers	2024	2024Pavers75	75	0.248	2.708	3.423	0.144	0.133	0.005	526.332	0.021	0.004
Pavers	2024	2024Pavers100	100	0.196	1.854	3.015	0.088	0.081	0.005	528.824	0.021	0.004
Pavers	2024	2024Pavers175	175	0.130	1.480	1.009	0.048	0.044	0.005	528.480	0.021	0.004
Pavers	2024	2024Pavers300	300	0.103	0.978	0.975	0.027	0.025	0.005	527.659	0.021	0.004
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Product Prod	Pavers	2024	2024Pavers600	600	0.059	0.261	0.947	0.009	0.008	0.005	527.836	0.021	0.004
Powlet pulpment													
Proving Equipment 2024	_ : :												
Profit polyment 2024	9			=1									
Pumping Equipment 2004 2004 2004 2005 27,5 2005 31,24 0,105 0,057 0,005 377,385 0,021 0,004 2004				-									
Proving Couplement 2024				-									
Pewing Equipment 70/4 700**Pewing Equipment (100 500 138 3.15 1021 0.014 0.008 0.005 527.215 0.021 0.008 0			9	-									
Pening Capupment 2024 2024-Pening Enginement 2024 20				300		1.315	1.021						
Pering Equipment Did 2004-Pering Equipment Did 2.986 1.002 0.009 0.087 0.008 278.075 0.021 0.009 0.0								0.036					
Pressure Washers 2024		2024	2024Paving Equipment750	750	0.112	2.366	1.002	0.040	0.037	0.005	528.095	0.021	0.004
Petsury Washers 2024 2024Frequency 2 5 0,28 3,56 3,131 0,096 0,008 50,308 0,023 0,005 0,000 0,00	Plate Compactors	2024	2024Plate Compactors0	0	0.547	4.143	3.470	0.162	0.149	0.009	568.353	0.023	0.005
Pumps 2024	Pressure Washers	2024	2024Pressure Washers0	0	0.534	4.414	3.275	0.184	0.169	0.009	578.474	0.023	0.005
Pumps 2024 2024-Pumps 202 2024-Pumps 2024 2024-Pumps 2024-Pumps 2024 2024-Pumps 2024-Pumps 2024 2024-Pumps 2024-Pumps 2024 2024-Pumps	Pressure Washers	2024	2024Pressure Washers25	25	0.282	3.526	3.313	0.090	0.082	0.008	582.246	0.024	0.005
Rollers 2024 2024Rollerd 0	Pumps	2024	2024Pumps0	0	0.581	4.365	3.012	0.185	0.170	0.008	568.303	0.023	0.005
Rollers 2024 2024Hollers 25 0.518 3.814 4.195 0.192 0.177 0.005 58.798 0.024 0.005 foliers 2024 2024Rollers 25 0.187 0.706 7.749 3.419 0.144 0.127 0.005 0.005 52.738 0.021 0.004 foliers 2024 2024Rollers 2024 1.004 0.005 0.	Pumps	2024	2024Pumps25	25	0.433	3.630	3.974	0.115	0.105	0.007	568.309	0.023	0.005
Bollers 2024 2024HollerS9 50 1870 15.05 6.146 1071 0.986 0.005 527.799 0.021 0.004 0.005	Rollers	2024		0	0.833	6.317	4.394	0.242	0.223	0.012	847.965	0.034	0.007
Rollers 2024 2024Roller179 75 0.760 2.769 3.419 0.144 0.132 0.005 528.107 0.071 0.014 Rollers 2024 2024Roller130 100 0.141 1.233 2.911 0.060 0.056 0.005 527.451 0.021 0.014 Rollers 2024 2024Roller130 100 0.141 1.233 2.911 0.060 0.056 0.005 527.451 0.021 0.014 Rollers 2024 2024Roller130 100 0.041 1.477 1.417 0.049 0.065 0.005 528.131 0.021 0.014 Rollers 2024 2024Roller130 100 0.041 1.477 1.417 0.049 0.065 0.005 530.541 0.021 0.014 Roller 1.0014 0.005 0.005 528.131 0.021 0.014 Roller 1.0014 0.005 0.005 0.005 528.131 0.021 0.014 0.005 0.005 0.005 528.131 0.021 0.004 0.005 0.005 0.005 528.131 0.021 0.004 0.005 0.00			2024Rollers25	25	0.618	3.814	4.195	0.192	0.177	0.005	586.798	0.024	0.005
Rollers (2024 2024Allogalers100 100 0.141 1,333 2,911 0.060 0.056 0.005 0.774,51 0.071 0.004 Rollers (2024 2024Allogalers100 300 0.141 1,447 0.049 0.045 0.005 530,541 0.022 0.004 Rollers (2024 2024Allogalers100 100 0.041 1,447 1,417 0.049 0.045 0.005 530,541 0.022 0.004 Rollers (2024 2024Allogalers100 100 0.045 0.024 0.005 Rollars (2024 2024Allogalers100 100 0.045 0.024 0.005 Rollars (2024 2024Allogalers100 100 0.045 0.024 0.005 Rollars (2024 0.005 Rollars (2024 2024Allogalers100 100 0.045 0.024 0.005 Rollars (2024 2024Allogalers100 100 0.045 0.024 0.005 Rollars (2024 2024Rollars (2024Rollers50	50	1.870	15.055	6.146	1.071	0.986	0.005	527.793	0.021	0.004
Rollers 2024 2024Alloelers175 175 0.214 2,357 1,522 0.091 0.083 0.005 528,113 0.021 0.004 Rollers 2024 2024Alloelers175 2024 2024Alloelers175 2030 0.141 1.447 1.447 1.447 0.049 0.045 0.055 38,0141 0.022 0.004 0.005 0.006 0				-									
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Rough Terrain Forkifits 2024 2024Rough Ter													
Rough Terrain Forkilifs 2024 2024Rough Terrain ForkillF125 25 0.499 3.541 3.799 0.141 0.129 0.005 586.945 0.024 0.025 Rough Terrain ForkillF15 2024 2024Rough Terrain ForkillF15 75 0.175 1.794 3.724 0.043 0.040 0.005 578.511 0.001 0.006 0.007 0.00				300									
Rough Terrain Forkilits 2024 2024Rough Terrain ForkilliSSO 50 2,00 0,515 6,280 0,025 0,059 0,005 522,08 0,023 0,005 Rough Terrain ForkilliSSO 75 0,125 1,794 3,224 0,043 0,040 0,005 525,511 0,021 0,004 Rough Terrain ForkilliSSO 100 0,005 1,005 1,005 0,0			3										
Rough Terrain Forkiffs	=		Ÿ										
Rough Terrain Forkilits 2024 2024Alugh Terrain Forkilits 100 0,000 1.675 2.951 0.111 0.102 0.005 527,588 0.021 0.004 Rough Terrain Forkilits 2024 2024Alugh Terrain Forkilits 175 175 0.114 1.398 0.989 0.038 0.030 0.005 527,513 0.021 0.004 Rough Terrain Forkilits 2024 2024Alugh Terrain	_		Ÿ	-									
Rough Terrain Forkliffs 2024 2024ABough Terrain Forkliffs 2024	_		Ÿ	-									
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Rough Firerian Forkliffs 2024 2024Rough Terrain Forkliffs 2034 2024Rough Terrain Forkliffs 25	_		Ÿ	-									
Rubber Tired Dozers Rubber Tired Dozers 2024 Rubber Tired Dozers 50 Rubber Tired Loaders 70 Rubber Tired Loader	_		Ÿ	-									
Rubber Tired Dozers Rubber Tired Lozers Rubber	_		,	=1									
Rubber Tired Dozers (2024 2024Rubber Tired Dozers75 75 0.637 5.315 4.180 0.393 0.382 0.005 531.865 0.022 0.004 Rubber Tired Dozers (2024 2024Rubber Tired Lozers (2024 2024Rubber Tired Lozer (2				=1									
Rubber Tired Dozers (2024 2024Rubber Tired Dozers175 175 0.525 5.776 3.784 0.237 0.005 528.043 0.021 0.004 Rubber Tired Dozers (2024 2024Rubber Tired Dozers300 300 0.409 4.010 3.253 0.179 0.164 0.005 538.203 0.022 0.004 (2024Rubber Tired Dozers 0.006) 0.409 4.010 3.253 0.179 0.164 0.005 537.876 0.021 0.004 Rubber Tired Dozers (2024 2024Rubber Tired Dozers600 0.007 0.008 0.009				-									
Rubber Tired Dozers Rubber Tired Dozers 2024 Rubber Tired Dozers 300 Rubber Tired Loaders 2024 Rubber Tired Lozer 300 Rubber Tired L				-									
Rubber Tired Dozers Rubber Tired Loaders Rubber Tired L				-									
Rubber Tired Loaders 2024 2024Rubber Tired Loaders50 0 0 0.849 6.490 3.505 0.243 0.203 0.01 851.331 0.035 0.007 Rubber Tired Loaders 2024 2024Rubber Tired Loaders50 1 0 0.849 6.490 3.505 0.243 0.223 0.011 851.331 0.035 0.007 Rubber Tired Loaders 2024 2024Rubber Tired Loaders50 5 1.015 4.494 6.022 0.288 0.265 0.005 589.803 0.024 0.005 Rubber Tired Loaders 2024 2024Rubber Tired Loaders50 5 1.324 10.260 4.539 0.919 0.845 0.005 521.322 0.021 0.004 Rubber Tired Loaders 2024 2024Rubber Tired Loaders 2024 2024Scrapers 2024 2024Sc				-									
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Rubber Tired Loaders 2024 2024Rubber Tired Loaders25 25 1.015 4.494 6.022 0.288 0.265 0.005 589.803 0.024 0.005 Rubber Tired Loaders 2024 2024Rubber Tired Loaders 2024 10.260 4.539 0.919 0.845 0.005 521.322 0.021 0.004 Rubber Tired Loaders 2024 2024Rubber Tired Loaders 2024 2				-									
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Scrapers 2024 2024Scrapers75 75 0.518 5.413 3.995 0.386 0.355 0.005 530.381 0.022 0.004 Scrapers 2024 2024Scrapers100 100 0.313 2.915 3.342 0.153 0.140 0.005 531.820 0.022 0.004 Scrapers 2024 2024Scrapers375 175 0.321 3.212 1.700 0.145 0.134 0.005 527.327 0.021 0.004 Scrapers 2024 2024Scrapers300 300 0.229 2.292 1.711 0.089 0.081 0.005 528.968 0.021 0.004 Scrapers 2024 2024Scrapers500 600 0.710 9.628 6.815 0.398 0.366 0.005 529.775 0.021 0.004 Scrapers 2024 2024Scrapers750 750 0.416 5.964 4.049 0.205 0.188 0.005 527.722 0.021 0.004 Signal Boards 2024	Scrapers	2024	2024Scrapers25	25	3.417	6.751	9.617	0.949	0.873	0.005	577.150	0.023	0.005
Scrapers 2024 2024Scrapers100 100 0.313 2.915 3.342 0.153 0.140 0.005 531.820 0.022 0.004 Scrapers 2024 2024Scrapers175 175 0.321 3.212 1.700 0.145 0.134 0.005 527.327 0.021 0.004 Scrapers 2024 2024Scrapers300 300 0.229 2.292 1.711 0.089 0.081 0.005 528.968 0.021 0.004 Scrapers 2024 2024Scrapers600 600 0.710 9.628 6.815 0.398 0.366 0.005 529.775 0.021 0.004 Signal Boards 2024 2024Scrapers750 750 0.416 5.964 4.049 0.205 0.188 0.005 527.722 0.021 0.004 Signal Boards 2024 2024Signal Boards25 25 0.458 3.621 4.200 0.113 0.104 0.007 568.303 0.023 0.005 Skid Steer Loaders	Scrapers	2024	2024Scrapers50	50	0.755	5.825	4.082	0.495	0.455	0.005	531.943	0.022	0.004
Scrapers 2024 2024Scrapers175 175 0.321 3.212 1.700 0.145 0.134 0.005 527.327 0.021 0.004 Scrapers 2024 2024Scrapers300 300 0.229 2.292 1.711 0.089 0.081 0.005 528.968 0.021 0.004 Scrapers 2024 2024Scrapers600 600 0.710 9.628 6.815 0.398 0.366 0.005 529.775 0.021 0.004 Scrapers 2024 2024Scrapers750 750 0.416 5.964 4.049 0.205 0.188 0.005 527.722 0.021 0.004 Signal Boards 2024 2024Signal Boards0 0 0.547 4.143 3.470 0.162 0.149 0.009 568.303 0.023 0.005 Skid Steer Loaders 2024 2024Signal Boards25 25 0.458 3.621 4.200 0.113 0.104 0.007 561.957 0.023 0.005 Skid Steer Loaders	Scrapers	2024	2024Scrapers75	75	0.518	5.413	3.995	0.386	0.355	0.005	530.381	0.022	0.004
Scrapers 2024 2024Scrapers300 300 0.229 2.292 1.711 0.089 0.081 0.005 528.968 0.021 0.004 Scrapers 2024 2024Scrapers600 600 0.710 9.628 6.815 0.398 0.366 0.005 529.775 0.021 0.004 Scrapers 2024 2024Scrapers750 750 0.416 5.964 4.049 0.205 0.188 0.005 527.722 0.021 0.004 Signal Boards 2024 2024Signal Boards0 0 0.547 4.143 3.470 0.162 0.149 0.009 568.303 0.023 0.005 Skid Steer Loaders 2024 2024Signal Boards25 25 0.458 3.621 4.200 0.113 0.104 0.007 561.957 0.023 0.005 Skid Steer Loaders 2024 2024Skid Steer Loaders0 0 0.848 6.496 3.494 0.250 0.230 0.011 848.207 0.034 0.005 Skid Ste	Scrapers			100	0.313	2.915	3.342	0.153	0.140	0.005	531.820	0.022	0.004
Scrapers 2024 2024Scrapers600 600 0.710 9.628 6.815 0.398 0.366 0.005 529.775 0.021 0.004 Scrapers 2024 2024Scrapers750 750 0.416 5.964 4.049 0.205 0.188 0.005 527.722 0.021 0.004 Signal Boards 2024 2024Signal Boards0 0 0.547 4.143 3.470 0.162 0.149 0.009 568.303 0.023 0.005 Skid Steer Loaders 2024 2024Signal Boards25 25 0.458 3.621 4.200 0.113 0.104 0.007 561.957 0.023 0.005 Skid Steer Loaders 2024 2024Skid Steer Loaders0 0 0.848 6.496 3.494 0.250 0.230 0.011 848.207 0.034 0.007 Skid Steer Loaders 2024 2024Skid Steer Loaders25 25 0.349 3.338 3.662 0.088 0.081 0.005 588.969 0.024 0.005	Scrapers			-									
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Signal Boards 2024 2024Signal Boards0 0 0.547 4.143 3.470 0.162 0.149 0.009 568.303 0.023 0.005 Signal Boards 2024 2024Signal Boards25 25 0.458 3.621 4.200 0.113 0.104 0.007 561.957 0.023 0.005 Skid Steer Loaders 2024 2024Skid Steer Loaders0 0 0.848 6.496 3.494 0.250 0.230 0.011 848.207 0.034 0.007 Skid Steer Loaders 2024 2024Skid Steer Loaders25 25 0.349 3.338 3.662 0.088 0.081 0.005 588.969 0.024 0.005 Skid Steer Loaders 2024 2024Skid Steer Loaders50 50 0.142 1.918 3.255 0.059 0.054 0.005 528.170 0.001 0.004 Skid Steer Loaders 2024 2024Skid Steer Loaders75 75 1.125 7.862 4.112 0.784 0.721 0.005 523.523 0.021 0.004				-									
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	Skia Steer Loaders	2024	ZUZ45KIQ STEER LOAGERSTUU	_ 100	0.131	1.244	2.879	0.053	0.048	0.005	526.346	0.021	0.004

Skid Steer Londers	Skid Steer Loaders	2024	2024Skid Steer Loaders175	175	0.105	1.185	0.989	0.036	0.034	0.005	528.250	0.021	0.004
Skid Steer Loaders 2024 2024Surfaing Equipment 2024	Skid Steer Loaders	2024	2024Skid Steer Loaders300	300			0.998	0.091	0.084	0.005		0.021	0.004
Surfacing Equipment 2024 2024Surfacing Equipment 25 0.329 3.673 3.615 0.115 0.105 0.005 591.938 0.004 0.005	Skid Steer Loaders	2024	2024Skid Steer Loaders600	600	0.166	2.085	0.998	0.091	0.084	0.005	528.537	0.021	0.004
Surfacing Equipment 2024 2024surfacing EquipmentSI 50 0.662 6.374 3.869 0.418 0.385 0.005 529.534 0.021 0.004 0.005 0.00	Skid Steer Loaders	2024	2024Skid Steer Loaders750	750	0.074	2.289	0.953	0.031	0.028	0.005	528.537	0.021	0.004
Surfacing Equipment 2024 2024Surfacing Equipment (2) 75 0.156 2.191 3.277 0.081 0.074 0.005 \$31.151 0.022 0.004 Surfacing Equipment 2024 2024Surfacing Equipment175 175 0.193 2.533 1.300 0.04 0.005 \$29.139 0.021 0.004 Surfacing Equipment 2024 2024Surfacing Equipment000 600 0.091 0.888 0.996 0.033 0.030 0.005 \$27.137 0.021 0.004 Surfacing Equipment 2024 2024Surfacing Equipment000 600 0.091 0.888 0.996 0.033 0.030 0.005 \$27.931 0.021 0.004 Sweepers/Scrubbers 2024 2024Sweepers/Scrubbers 0 0.802 6.371 4.138 0.242 0.223 0.021 0.003 Sweepers/Scrubbers 2024 2024Sweepers/Scrubbers 0 0.802 6.991 4.372 0.629 0.579 0.005 \$24.229 0.021 0.004	Surfacing Equipment	2024	2024Surfacing Equipment25	25	0.329	3.673	3.615	0.115	0.105	0.005	591.938	0.024	0.005
Surfacing Equipment 2024 2024Surfacing Equipment100 100 0.311 3.076 3.120 0.175 0.161 0.000 529.139 0.021 0.004 2024 2024Surfacing Equipment175 75 0.153 5.33 1.330 0.084 0.078 0.005 529.139 0.021 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.004 0.005 0.005 0.004 0.004 0.004 0.004 0.005 0.004 0.004 0.004 0.004 0.004 0.004 0.005 0.004 0.004 0.004 0.004 0.005 0.004 0.004 0.004 0.005 0.004 0.004 0.005 0.005 0.004 0.005	Surfacing Equipment	2024	2024Surfacing Equipment50	50	0.662	6.374	3.869	0.418	0.385	0.005	529.534	0.021	0.004
Surfacing Equipment 2024 2024Surfacing Equipment175 175 0.193 2.533 1.220 0.084 0.005 529.139 0.021 0.004 Surfacing Equipment 2024 2024Surfacing Equipment600 600 0.091 0.888 0.996 0.033 0.00 0.005 527.312 0.021 0.004 Surfacing Equipment 2024 2024Surfacing Equipment500 600 0.091 0.888 0.996 0.033 0.00 0.005 527.331 0.021 0.004 Sweeper/Scrubbers 2024 2024Sweeper/Scrubbers9 0 0.802 6.371 4.138 0.42 0.23 0.012 849.74 0.034 0.005 Sweeper/Scrubbers 2024 2024Sweeper/Scrubbers075 5 0.694 6.991 4.372 0.629 0.579 0.005 528.031 0.021 0.004 Sweeper/Scrubbers 2024 2024Sweeper/Scrubbers075 5 0.262 2.644 3.298 0.123 0.012 8.005 528.031 0.021	Surfacing Equipment	2024	2024Surfacing Equipment75	75	0.156	2.191	3.277	0.081	0.074	0.005	531.151	0.022	0.004
Surfacing Equipment 2024 2024Surfacing Equipment300 300	Surfacing Equipment	2024	2024Surfacing Equipment100	100	0.311	3.076	3.120	0.175	0.161	0.005	528.304	0.021	0.004
Surfacing Equipment 2024 2024/sturfacing Equipment600 600 0.991 0.888 0.996 0.033 0.030 0.005 527,332 0.021 0.004 Swrfacing Equipment 2024 2024/stracting Equipment 750 0.119 2.799 1.123 0.047 0.044 0.005 527,331 0.021 0.004 Sweepers/Scrubbers 2024 2024/sweepers/Scrubbers25 25 0.748 4.075 4.998 0.238 0.219 0.005 587,008 0.020 0.007 Sweepers/Scrubbers 2024 2024/sweepers/Scrubbers50 50 0.954 6.991 4.372 0.629 0.579 0.005 528,229 0.021 0.004 Sweepers/Scrubbers 2024 2024/sweepers/Scrubbers100 10 0.266 2.648 3.298 0.139 0.128 0.05 528,021 0.021 0.004 Sweepers/Scrubbers 2024 2024/sweepers/Scrubbers 2024 2024/sweepers/Scrubbers 300 0.074 0.267 0.974 0.009 <	Surfacing Equipment	2024	2024Surfacing Equipment175	175	0.193	2.533	1.320	0.084	0.078	0.005	529.139	0.021	0.004
Surfacing Equipment 2024 2024Surfacing Equipment750 750	Surfacing Equipment	2024	2024Surfacing Equipment300	300	0.117	1.236	1.071	0.046	0.043	0.005	527.717	0.021	0.004
Sweepers/Scrubbers 2024 2024Sweepers/Scrubbers0 0 0.802 6.371 4.138 0.242 0.223 0.012 849/44 0.024 0.005 5.005 0.005 5.005 0.005 0.005 5.005 0	Surfacing Equipment	2024	2024Surfacing Equipment600	600	0.091	0.888	0.996	0.033	0.030	0.005	527.332	0.021	0.004
Sweepers/Scrubbers 2024 2024Sweepers/Scrubbers25 25 0.745 4.075 4.998 0.238 0.219 0.005 \$87.008 0.024 0.005	Surfacing Equipment	2024	2024Surfacing Equipment750	750	0.119	2.799	1.123	0.047	0.044	0.005	527.931	0.021	0.004
Sweepers/Scrubbers 2024 2024Sweepers/Scrubbers50 50	Sweepers/Scrubbers	2024	2024Sweepers/Scrubbers0	0	0.802	6.371	4.138	0.242	0.223	0.012	849.744	0.034	0.007
Sweepers/Scrubbers 2024 2024Sweepers/Scrubbers100 100	Sweepers/Scrubbers	2024	2024Sweepers/Scrubbers25	25	0.745	4.075	4.998	0.238	0.219	0.005	587.008	0.024	0.005
Sweepers/Scrubbers 2024 2024Sweepers/Scrubbers100 100 0.266 2.248 3.226 0.107 0.098 0.005 528.031 0.021 0.004	Sweepers/Scrubbers	2024	2024Sweepers/Scrubbers50	50	0.954	6.991	4.372	0.629	0.579	0.005	524.229	0.021	0.004
Sweepers/Scrubbers 2024 2024Sweepers/Scrubbers375 175 0.188 1.992 1.132 0.064 0.059 0.005 528.031 0.021 0.004 0.009 0.005 0.005 0.005 0.004 0.009 0.005 0.005 0.004 0.009 0.005 0.004 0.004 0.009 0.005 0.004 0.004 0.009 0.005 0.004 0.004 0.009 0.005 0.004 0.004 0.009 0.005 0.005 0.004 0.004 0.005 0.004 0.004 0.005 0.004 0.004 0.005 0.004 0.004 0.005 0.004 0.004 0.004 0.004 0.005 0.004 0.004 0.004 0.005 0.004 0.004 0.005 0.004 0.005 0.005 0.004 0.004 0.005 0.004 0.005 0.004 0.005 0.005 0.004 0.005 0.005 0.005 0.004 0.005 0.00	· · · · · · · · · · · · · · · · · · ·			75	0.262	2.654	3.598	0.139	0.128	0.005	528.146	0.021	0.004
Sweepers/Scrubbers 2024 2024Sweepers/Scrubbers300 300 0.74 0.267 0.974 0.009 0.009 528.031 0.021 0.004 Sweepers/Scrubbers 2024 2024Sweepers/Scrubbers50 750 0.057 2.275 0.944 0.018 0.005 528.031 0.021 0.004 Tractors/Loaders/Backhoes 2024 2024Tractors/Loaders/Backhoes0 0 0.846 6.667 3.493 0.242 0.222 0.011 848.372 0.034 0.007 Tractors/Loaders/Backhoes 2024 2024Tractors/Loaders/Backhoes50 5 0.596 3.809 4.658 0.168 0.018 8.8372 0.005 880.944 0.005 Tractors/Loaders/Backhoes 2024 2024Tractors/Loaders/Backhoes50 50 1.630 12.795 5.417 1.025 0.943 0.005 528.215 0.01 0.004 Tractors/Loaders/Backhoes 2024 2024Tractors/Loaders/Backhoes75 75 0.215 2.192 3.495 0.097 0.089 0.005 528.215	· · · · · · · · · · · · · · · · · · ·		i ·	100	0.266		3.226	0.107	0.098	0.005	528.031	0.021	0.004
Sweepers/Scrubbers 2024 2024Sweepers/Scrubbers600 600 0.74 0.267 0.974 0.009 0.009 0.005 528.031 0.021 0.004	Sweepers/Scrubbers	2024	2024Sweepers/Scrubbers175	175	0.188	1.992	1.132	0.064	0.059	0.005	528.031	0.021	0.004
Sweepers/Scrubbers 2024 2024Fractors/Loaders/Backhoes 2024 2024Fractors/Loaders/Backho	· · · · · · · · · · · · · · · · · · ·			300	0.074	0.267	0.974	0.009	0.009	0.005	528.031	0.021	0.004
Tractors/Loaders/Backhoes 2024 2024Tractors/Loaders/Backhoes0 0 0.846 6.467 3.493 0.242 0.222 0.011 848.372 0.034 0.007	Sweepers/Scrubbers			600	0.074	0.267	0.974	0.009	0.009	0.005	528.031	0.021	0.004
Tractors/Loaders/Backhoes 2024 2024Tractors/Loaders/Backhoes25 25 0.596 3.809 4.658 0.168 0.154 0.005 580.944 0.024 0.005	· · · · · · · · · · · · · · · · · · ·			750	0.057	2.275	0.944	0.018	0.017	0.005	528.031	0.021	0.004
Tractors/Loaders/Backhoes 2024 2024Tractors/Loaders/Backhoes50 50 1.630 12.795 5.417 1.025 0.943 0.005 528.215 0.021 0.004	· · · · · · · · · · · · · · · · · · ·			0	0.846		3.493	0.242	0.222	0.011	848.372	0.034	0.007
Tractors/Loaders/Backhoes 2024 2024Tractors/Loaders/Backhoes75 75 0.215 2.192 3.495 0.097 0.089 0.005 529.933 0.021 0.004	· · · · · · · · · · · · · · · · · · ·		· · · · · ·	25	0.596	3.809	4.658	0.168	0.154	0.005	580.944	0.024	0.005
Tractors/Loaders/Backhoes 2024 2024Tractors/Loaders/Backhoes100 100 0.176 1.380 3.096 0.069 0.063 0.005 526.286 0.021 0.004				50	1.630			1.025		0.005	528.215	0.021	
Tractors/Loaders/Backhoes 2024 2024Tractors/Loaders/Backhoes300 300 0.151 1.226 0.060 0.055 0.005 526.144 0.021 0.004 Tractors/Loaders/Backhoes 2024 2024Tractors/Loaders/Backhoes300 300 0.151 1.155 1.211 0.044 0.041 0.005 525.872 0.021 0.004 Tractors/Loaders/Backhoes 2024 2024Tractors/Loaders/Backhoes600 600 0.264 2.296 2.07 0.095 0.084 0.005 527.874 0.021 0.004 Tractors/Loaders/Backhoes 2024 2024Tractors/Loaders/Backhoes5750 750 0.170 3.141 1.035 0.059 0.054 0.005 527.874 0.021 0.004 Trenchers 2024 2024Trenchers0 0 0.840 6.415 3.826 0.242 0.222 0.011 848.779 0.034 0.007 Trenchers 2024 2024Trenchers25 25 0.599 3.824 4.222 0.196 0.180 0.005 527.464 <				_									
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Tractors/Loaders/Backhoes 2024 2024Tractors/Loaders/Backhoes600 600 0.264 2.296 2.677 0.095 0.088 0.005 518.144 0.021 0.004 Tractors/Loaders/Backhoes 2024 2024Tractors/Loaders/Backhoes750 750 0.170 3.141 1.035 0.059 0.054 0.005 527.874 0.021 0.004 Trenchers 2024 2024Trenchers0 0 0.840 6.415 3.826 0.242 0.222 0.011 848.779 0.034 0.007 Trenchers 2024 2024Trenchers25 25 0.599 3.824 4.221 0.196 0.180 0.005 527.464 0.007 Trenchers 2024 2024Trenchers50 50 0.806 7.032 4.221 0.196 0.180 0.005 527.464 0.001 0.004 Trenchers 2024 2024Trenchers75 75 0.435 4.127 3.662 0.278 0.256 0.005 528.932 0.021 0.004				_					0.055	0.005	526.144	0.021	
Tractors/Loaders/Backhoes 2024 2024Tractors/Loaders/Backhoes750 750 0.170 3.141 1.035 0.059 0.054 0.005 527.874 0.021 0.004 Trenchers 2024 2024Trenchers0 0 0.840 6.415 3.826 0.242 0.222 0.011 848.779 0.034 0.007 Trenchers 2024 2024Trenchers25 25 0.599 3.824 4.222 0.196 0.180 0.005 587.904 0.004 0.005 Trenchers 2024 2024Trenchers50 50 0.806 7.032 4.211 0.526 0.484 0.005 527.464 0.021 0.004 Trenchers 2024 2024Trenchers75 75 0.435 4.127 3.662 0.278 0.256 0.005 528.932 0.021 0.004 Trenchers 2024 2024Trenchers100 100 0.366 3.692 3.334 0.188 0.173 0.005 526.797 0.021 0.004 Trenchers				_									
Trenchers 2024 2024Trenchers0 0 0.840 6.415 3.826 0.242 0.222 0.011 848.779 0.034 0.007 Trenchers 2024 2024Trenchers25 25 0.599 3.824 4.222 0.196 0.180 0.005 587.904 0.024 0.005 Trenchers 2024 2024Trenchers50 50 0.806 7.032 4.211 0.526 0.484 0.005 527.464 0.021 0.004 Trenchers 2024 2024Trenchers75 75 0.435 4.127 3.662 0.278 0.256 0.005 528.932 0.021 0.004 Trenchers 2024 2024Trenchers175 175 0.296 3.692 3.334 0.188 0.173 0.005 528.932 0.021 0.004 Trenchers 2024 2024Trenchers175 175 0.296 3.292 1.545 0.139 0.127 0.005 529.435 0.021 0.004 Trenchers 2024	· · · · · · · · · · · · · · · · · · ·		· · ·										
Trenchers 2024 2024Trenchers25 25 0.599 3.824 4.222 0.196 0.180 0.005 587.904 0.024 0.005 Trenchers 2024 2024Trenchers50 50 0.806 7.032 4.211 0.526 0.484 0.005 527.464 0.021 0.004 Trenchers 2024 2024Trenchers75 75 0.435 4.127 3.662 0.278 0.256 0.005 528.932 0.021 0.004 Trenchers 2024 2024Trenchers100 100 0.366 3.692 3.334 0.188 0.173 0.005 528.932 0.021 0.004 Trenchers 2024 2024Trenchers175 175 0.296 3.292 1.545 0.139 0.127 0.005 529.435 0.021 0.004 Trenchers 2024 2024Trenchers300 300 0.179 1.685 1.642 0.071 0.065 0.005 530.208 0.022 0.004 Trenchers 2024				_									
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Trenchers 2024 2024Trenchers75 75 0.435 4.127 3.662 0.278 0.256 0.005 528.932 0.021 0.004 Trenchers 2024 2024Trenchers100 100 0.366 3.692 3.334 0.188 0.173 0.005 526.797 0.021 0.004 Trenchers 2024 2024Trenchers175 175 0.296 3.292 1.545 0.139 0.127 0.005 529.435 0.021 0.004 Trenchers 2024 2024Trenchers300 300 0.179 1.685 1.642 0.071 0.065 0.005 530.208 0.022 0.004 Trenchers 2024 2024Trenchers600 600 0.059 0.262 0.948 0.009 0.008 0.005 528.023 0.021 0.004 Trenchers 2024 2024Trenchers750 750 1.174 13.392 14.184 0.624 0.574 0.005 528.023 0.021 0.004 Welders 2024 </td <td></td> <td></td> <td></td> <td>_</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>				_									
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Trenchers 2024 2024Trenchers175 175 0.296 3.292 1.545 0.139 0.127 0.005 529.435 0.021 0.004 Trenchers 2024 2024Trenchers300 300 0.179 1.685 1.642 0.071 0.065 0.005 530.208 0.022 0.004 Trenchers 2024 2024Trenchers600 600 0.059 0.262 0.948 0.009 0.008 0.005 528.334 0.021 0.004 Trenchers 2024 2024Trenchers750 750 1.174 13.392 14.184 0.624 0.574 0.005 528.023 0.021 0.004 Welders 2024 2024Welders0 0 0.585 4.384 2.817 0.184 0.169 0.008 568.343 0.023 0.005									0.256	0.005			
Trenchers 2024 2024Trenchers300 300 0.179 1.685 1.642 0.071 0.065 0.005 530.208 0.022 0.004 Trenchers 2024 2024Trenchers600 600 0.059 0.262 0.948 0.009 0.008 0.005 528.334 0.021 0.004 Trenchers 2024 2024Trenchers750 750 1.174 13.392 14.184 0.624 0.574 0.005 528.023 0.021 0.004 Welders 2024 2024Welders0 0 0.585 4.384 2.817 0.184 0.169 0.008 568.343 0.023 0.005				_									
Trenchers 2024 2024Trenchers600 600 0.059 0.262 0.948 0.009 0.008 0.005 528.334 0.021 0.004 Trenchers 2024 2024Trenchers750 750 1.174 13.392 14.184 0.624 0.574 0.005 528.023 0.021 0.004 Welders 2024 2024Welders0 0 0.585 4.384 2.817 0.184 0.169 0.008 568.343 0.023 0.005				_						0.005			
Trenchers 2024 2024Trenchers750 750 1.174 13.392 14.184 0.624 0.574 0.005 528.023 0.021 0.004 Welders 2024 2024Welders0 0 0.585 4.384 2.817 0.184 0.169 0.008 568.343 0.023 0.005				_									
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				_									
Welders 2024 2024Welders25 25 0.534 3.783 4.558 0.131 0.120 0.007 568.290 0.023 0.005				_					0.169				
	Welders	2024	2024Welders25	25	0.534	3.783	4.558	0.131	0.120	0.007	568.290	0.023	0.005

CalEEMod Equipment Defaults

Source: CalEEMod version 2022

OFFROAD Equipment Type	Horsepower	CMOD High	Carl Moyer LF
Aerial Lifts	63	50	0.31
Air Compressors	78	120	0.48
Bore/Drill Rigs	221	250	0.50
Cement and Mortar Mixers	9	15	0.56
Concrete/Industrial Saws	81	120	0.73
Cranes	231	250	0.29
Crawler Tractors	212	250	0.43
Crushing/Proc. Equipment	85	120	0.78
Dumpers/Tenders	16	15	0.38
Excavators	158	175	0.38
Forklifts	89	120	0.20
Generator Sets	84	120	0.74
Graders	187	175	0.41
Off-Highway Tractors	124	120	0.44
Off-Highway Trucks	402	500	0.38
Other Construction Equipment	172	175	0.42
Other General Industrial Equipment	88	120	0.34
Other Material Handling Equipment	168	175	0.40
Pavers	130	120	0.42
Paving Equipment	132	120	0.36
Plate Compactors	8	15	0.43
Pressure Washers	13	15	0.30
Pumps	84	120	0.74
Rollers	80	120	0.38
Rough Terrain Forklifts	100	120	0.40
Rubber Tired Dozers	247	250	0.40
Rubber Tired Loaders	203	250	0.36
Scrapers	367	500	0.48
Signal Boards	6	15	0.82
Skid Steer Loaders	65	75	0.37
Surfacing Equipment	263	250	0.30
Sweepers/Scrubbers	64	75	0.46
Tractors/Loaders/Backhoes	97	120	0.37
Trenchers	78	120	0.50
Welders	46	50	0.45

Bullhead Solar Project

Appendix B: Air Quality and Greenhouse Gas Mass Emission Modeling

Onroad Emission Factors- Unmitigated and Uncontrolled Fugitive Dust

Source: EMFAC2021. Offsite emission factors for aggregate speeds. Onsite for speeds shown.

						Running (RUNEX, PMTW, PMBW) grams per mile								Proce	ss (IDLEX, S	STREX, TOT	EX, DIURN, HTS	SK, RUNLS, RES	TL) gran	ns per trip			
Year	Air Basir	n VehType	Speed	Lookup	ROG NOx	co	PM10 Ex	PM10 D	PM2.5 Ex	PM2.5 D	SO2	CO2	CH4 N2O	ROG	NOx	CO	PM10 Ex	PM10 D	PM2.5 Ex	PM2.5 D	SO2	CO2 CH4	N2O
2023	MDAB	T6	Offsite	2023T6Offsite	0.01 0.89	0.05	0.01	0.22	0.01	0.04	0.01	1058	0.00 0.17	0.23	12.81	7.57	0.02	0.00	0.02	0.00	0.02	2262 0.01	0.36
2024	MDAB	T6	Offsite	2024T6Offsite	0.01 0.91	0.05	0.01	0.22	0.01	0.04	0.01	1055	0.00 0.17	0.22	12.76	7.53	0.02	0.00	0.02	0.00	0.02	2261 0.01	0.36
2023	MDAB	T7	Offsite	2023T7Offsite	0.02 1.39	0.07	0.02	0.27	0.02	0.06	0.02	1611	0.00 0.25	1.91	25.41	26.72	0.02	0.00	0.02	0.00	0.04	4662 0.09	0.73
2024	MDAB	T7	Offsite	2024T7Offsite	0.02 1.37	0.07	0.02	0.27	0.02	0.06	0.02	1608	0.00 0.25	1.90	25.43	26.80	0.02	0.00	0.02	0.00	0.04	4636 0.09	0.73
2023	MDAB	LDA-LDT	Offsite	2023LDA-LDTOffsite	0.01 0.07	0.92	0.00	0.18	0.00	0.03	0.00	304	0.00 0.01	2.67	0.31	3.78	0.00	0.00	0.00	0.00	0.00	77 0.08	0.04
2024	MDAB	LDA-LDT	Offsite	2024LDA-LDTOffsite	0.01 0.06	0.85	0.00	0.18	0.00	0.03	0.00	297	0.00 0.01	2.54	0.29	3.53	0.00	0.00	0.00	0.00	0.00	75 0.08	0.03
2023	MDAB	T6	OnsiteUnmit	2023T6OnsiteUnmit	0.01 0.89	0.05	0.01	555.89	0.01	55.60	0.01	1058	0.00 0.17	0.23	12.81	7.57	0.02	0.00	0.02	0.00	0.02	2262 0.01	0.36
2024	MDAB	T6	OnsiteUnmit	2024T6OnsiteUnmit	0.01 0.91	0.05	0.01	555.89	0.01	55.60	0.01	1055	0.00 0.17	0.22	12.76	7.53	0.02	0.00	0.02	0.00	0.02	2261 0.01	0.36
2023	MDAB	T7	OnsiteUnmit	2023T7OnsiteUnmit	0.02 1.39	0.07	0.02	555.95	0.02	55.62	0.02	1611	0.00 0.25	1.91	25.41	26.72	0.02	0.00	0.02	0.00	0.04	4662 0.09	0.73
2024	MDAB	T7	OnsiteUnmit	2024T7OnsiteUnmit	0.02 1.37	0.07	0.02	555.95	0.02	55.62	0.02	1608	0.00 0.25	1.90	25.43	26.80	0.02	0.00	0.02	0.00	0.04	4636 0.09	0.73
2023	MDAB	LDA-LDT	OnsiteUnmit	2023LDA-LDTOnsiteUnmit	0.01 0.07	0.92	0.00	555.85	0.00	55.59	0.00	304	0.00 0.01	2.67	0.31	3.78	0.00	0.00	0.00	0.00	0.00	77 0.08	0.04
2024	MDAB	I DA-I DT	OnsiteUnmit	2024LDA-LDTOnsiteUnmit	0.01 0.06	0.85	0.00	555.85	0.00	55.59	0.00	297	0.00 0.01	2.54	0.29	3.53	0.00	0.00	0.00	0.00	0.00	75 0.08	0.03

CalEEMod Material Fugitive Dust Emission Factors Calculation Details in CalEEMod Users Guide, Appendix A

Site Watering 61% grading WARP Handbook, Table 3-7, 3.2-hour watering interval

Paving ROG EF
Grading PM10 EF
Grading PM2.5 EF
Bulldozing PM10 EF
Bulldozing PM2.5 EF
Truck loading PM10 EF @12%
Truck loading PM2.5 EF @12%
Demo PM10 EF
Demo PM2.5 EF

2.6200 lbs/acre	CalEEMod (no control)
0.4136 lbs/acre	CalEEMod (with watering)
0.0447 lbs/acre	CalEEMod (with watering)
0.2936 lbs/hr	CalEEMod (with watering)
0.1614 lbs/hr	CalEEMod (with watering)
0.000054 lb/ton	CalEEMod (with watering)
0.000008 lb/ton	CalEEMod (with watering)
0.0220 lb/ton	CalEEMod (no control)
0.0033 lb/ton	CalEEMod (no control)

Water and Wastewater Electricity Intensity (kWhr/MG) - Table 9.2 CalEEMod Appendix D

District	Supply Water	Treat Water	Distribute Water	Total Outdoor Use
Kern County APCD	9727	111	1272	11110

Bullhead Energy Analysis

Construction Energy Calcs	Unit	Amount ^a	BTU	MBTU
Trucks	gallons (diesel)	781,645	99,628,475,910	99,628
Workers	gallons (gasoline)	143,963	15,803,145,798	15,803
Equipment	gallons (diesel)	553,744	70,580,190,220	70,580
Water	kwh	724,041	2,470,427,626	2,470
total		same for unmit and mit		188,482

^a The construction-related energy consumption values are taken from Appendix A of the Air Quality Technical Report for the Bullhead Solar Project.

Operations Energy Calcs	Unit	Amount ^b	BTU	MBTU
Trucks	gallons (diesel)	2,059	262,485,928	262
Workers	gallons (gasoline)	10,370	1,138,340,932	1,138
Equipment	gallons (diesel)	10,686	1,362,056,172	1,362
Emergency Generator	gallons (diesel)	526	67,071,793	67
Water	kwh	39,822	135,873,519	136
Displaced Electricity (annual)	kwh	-870,000,000	-2,968,440,000,000	-2,968,440
total				-2,965,474

^b The operation-related energy consumption values are taken from Appendix A of the Air Quality Technical Report for the Bullhead Solar Project.

Conversions		Source
BTU_kWh	3,412	U.S. Energy Information Adminstration, 2019.
BTU/1 gallon gasoline	109,772	CARB. 2018. CA-GREET3.0 Supplemental Document and Tables of Changes. August 13.
BTU/1 gallon diesel	127,460	CARB. 2018. CA-GREET3.0 Supplemental Document and Tables of Changes. August 13.
kg CO2 per gal diesel	10.21	The Climate Registry. 2018. Default Emission Factors. May 1.
kg CO2 per gal gasoline	8.78	The Climate Registry. 2018. Default Emission Factors. May 1.
kgs per MT	1000	

Summary

	Energy Consumpt	ion (in million BTUs)
	Construction	Operations
Trucks	99,628	262
Workers	15,803	1,138
Equipment	70,580	1,362
Emergency Generator	-	67
Water	2,470	136
Displaced Electricity (annual)	-	-2,968,440
Total	188.482	-2.965.474

Construction is over the life of construction; operational consumption is on an annual basis

Passenger Vehicle and Truck Emission Factor Summary

							Runn	ing (RUNEX,	PMTW, PMB	W) grams per
Year	VehType	Speed	Lookup	ROG	NOx	CO	PM10 Ex	PM10 D	PM2.5 Ex	PM2.5 D
2023	T6		2023T6	0.01	0.89	0.05	0.01	0.05	0.01	0.02
2024	T6		2024T6	0.01	0.91	0.05	0.01	0.05	0.01	0.02
2023	T7		2023T7	0.02	1.39	0.07	0.02	0.11	0.02	0.03
2024	T7		2024T7	0.02	1.37	0.07	0.02	0.11	0.02	0.03
2023	LDA-LDT		2023LDA-LDT	0.01	0.07	0.92	0.00	0.01	0.00	0.00
2024	LDA-LDT		2024LDA-LDT	0.01	0.06	0.85	0.00	0.01	0.00	0.00
2023	T6Onsite	5	2023T6Onsite5	0.10	4.04	0.59	0.01	0.06	0.01	0.02
2023	T6Onsite	10	2023T6Onsite10	0.06	3.22	0.39	0.01	0.06	0.01	0.02
2023	T6Onsite	15	2023T6Onsite15	0.03	2.35	0.22	0.01	0.06	0.01	0.02
2024	T6Onsite	5	2024T6Onsite5	0.10	4.13	0.61	0.01	0.06	0.01	0.02
2024	T6Onsite	10	2024T6Onsite10	0.06	3.24	0.39	0.01	0.06	0.01	0.02
2024	T6Onsite	15	2024T6Onsite15	0.03	2.37	0.22	0.01	0.06	0.00	0.02
2023	T7Onsite	5	2023T7Onsite5	0.15	8.17	1.32	0.01	0.14	0.01	0.05
2023	T7Onsite	10	2023T7Onsite10	0.09	6.27	0.85	0.01	0.14	0.01	0.05
2023	T7Onsite	15	2023T7Onsite15	0.05	4.33	0.47	0.01	0.14	0.01	0.05
2024	T7Onsite	5	2024T7Onsite5	0.14	8.23	1.28	0.01	0.14	0.01	0.05
2024	T7Onsite	10	2024T7Onsite10	0.09	6.38	0.84	0.01	0.14	0.01	0.05
2024	T7Onsite	15	2024T7Onsite15	0.05	4.34	0.46	0.01	0.14	0.01	0.05
2023	LDA-LDTOnsite	5	2023LDA-LDTOnsite5	0.02	0.03	0.43	0.00	0.00	0.00	0.00
2023	LDA-LDTOnsite	10	2023LDA-LDTOnsite10	0.03	0.05	0.76	0.00	0.00	0.00	0.00
2023	LDA-LDTOnsite	15	2023LDA-LDTOnsite15	0.01	0.03	0.45	0.00	0.01	0.00	0.00
2024	LDA-LDTOnsite	5	2024LDA-LDTOnsite5	0.02	0.02	0.34	0.00	0.00	0.00	0.00
2024	LDA-LDTOnsite	10	2024LDA-LDTOnsite10	0.02	0.04	0.65	0.00	0.00	0.00	0.00
2024	LDA-LDTOnsite	15	2024LDA-LDTOnsite15	0.01	0.03	0.51	0.00	0.01	0.00	0.00

r mile				Process (IDLEX, STREX, TOTEX, DIURN, HTSK, RUNLS, RESTL) grams per trip								
SO2	CO2	CH4	N2O	ROG	NOx	CO	PM10 Ex	PM10 D	PM2.5 Ex	PM2.5 D	SO2	CO2
0.01	1058	0.00	0.17	0.23	12.81	7.57	0.02	0.00	0.02	0.00	0.02	2262.29
0.01	1055	0.00	0.17	0.22	12.76	7.53	0.02	0.00	0.02	0.00	0.02	2261.18
0.02	1611	0.00	0.25	1.91	25.41	26.72	0.02	0.00	0.02	0.00	0.04	4661.91
0.02	1608	0.00	0.25	1.90	25.43	26.80	0.02	0.00	0.02	0.00	0.04	4636.16
0.00	304	0.00	0.01	2.67	0.31	3.78	0.00	0.00	0.00	0.00	0.00	76.70
0.00	297	0.00	0.01	2.54	0.29	3.53	0.00	0.00	0.00	0.00	0.00	74.78
0.01	2425	0.00	0.38	0.23	12.81	7.57	0.02	0.00	0.02	0.00	0.02	2262.29
0.01	2015	0.00	0.32	0.23	12.81	7.57	0.02	0.00	0.02	0.00	0.02	2262.29
0.01	1586	0.00	0.25	0.23	12.81	7.57	0.02	0.00	0.02	0.00	0.02	2262.29
0.01	2421	0.00	0.38	0.22	12.76	7.53	0.02	0.00	0.02	0.00	0.02	2261.18
0.01	2006	0.00	0.32	0.22	12.76	7.53	0.02	0.00	0.02	0.00	0.02	2261.18
0.00	1579	0.00	0.25	0.22	12.76	7.53	0.02	0.00	0.02	0.00	0.02	2261.18
0.01	3528	0.01	0.56	1.91	25.41	26.72	0.02	0.00	0.02	0.00	0.04	4661.91
0.01	3020	0.00	0.48	1.91	25.41	26.72	0.02	0.00	0.02	0.00	0.04	4661.91
0.01	2450	0.00	0.39	1.91	25.41	26.72	0.02	0.00	0.02	0.00	0.04	4661.91
0.01	3472	0.01	0.55	1.90	25.43	26.80	0.02	0.00	0.02	0.00	0.04	4636.16
0.01	2996	0.00	0.47	1.90	25.43	26.80	0.02	0.00	0.02	0.00	0.04	4636.16
0.01	2424	0.00	0.38	1.90	25.43	26.80	0.02	0.00	0.02	0.00	0.04	4636.16
0.00	160	0.01	0.00	2.67	0.31	3.78	0.00	0.00	0.00	0.00	0.00	76.70
0.00	245	0.01	0.00	2.67	0.31	3.78	0.00	0.00	0.00	0.00	0.00	76.70
0.00	135	0.00	0.00	2.67	0.31	3.78	0.00	0.00	0.00	0.00	0.00	76.70
0.00	131	0.00	0.00	2.54	0.29	3.53	0.00	0.00	0.00	0.00	0.00	74.78
0.00	221	0.01	0.00	2.54	0.29	3.53	0.00	0.00	0.00	0.00	0.00	74.78
0.00	158	0.00	0.00	2.54	0.29	3.53	0.00	0.00	0.00	0.00	0.00	74.78

CH4 N2O 0.01 0.36 0.09 0.73 0.09 0.73 0.08 0.04 0.08 0.03 0.01 0.36 0.01 0.36 0.01 0.36 0.01 0.36 0.01 0.36 0.01 0.36 0.09 0.73 0.09 0.73 0.09 0.73 0.09 0.73 0.09 0.73 0.09 0.73 0.09 0.73 0.09 0.73 0.08 0.04 0.08 0.04 0.08 0.04 0.08 0.04		
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0.01	0.08	0.03
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0.08 0.04	0.09	0.73
	0.08	0.04
0.08 0.04	0.08	0.04
3.00	0.08	0.04
0.08 0.03	0.08	0.03
0.08 0.03	0.08	0.03
0.08 0.03	0.08	0.03

Source: EMFAC2021 (v1.0.1) Emission Rates

Region Type: Air Basin Region: Mojave Desert Calendar Year: 2023, 2024

Season: Annual

Vehicle Classification: EMFAC2011 Categories

Units: miles/day for CVMT and EVMT, g/mile for RUNEX, PMBW and PMTW, mph for Speed

Vehicle Typ∈ L								
Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Total VMT	CVMT	EVMT
Лоjave Deser	2023	LDA	Aggregate	5	Gasoline	4391	4391	0
√lojave Deser	2023	LDA	Aggregate	5	Diesel	13	13	0
Nojave Deser	2023	LDA	Aggregate	5	Electricity	19881	0	19881
Nojave Deser	2023	LDA	Aggregate	5	Plug-in Hybrid	3832	62	3769
Aojave Deser	2023	LDA	Aggregate	10	Gasoline	22450	22450	0
Aojave Deser	2023	LDA	Aggregate	10	Diesel	74	74	0
Aojave Deser	2023 2023	LDA	Aggregate	10	Electricity	31805	0	31805
Nojave Deser	2023	LDA	Aggregate	10 15	Plug-in Hybrid Gasoline	15375 28052	304 28052	15072
Aojave Deser	2023	LDA LDA	Aggregate	15 15	Diesel	28052 88	28052 88	0 0
∕lojave Deser ⁄lojave Deser	2023	LDA	Aggregate	15	Electricity	70833	0	70833
Nojave Deser	2023	LDA	Aggregate Aggregate	15	Plug-in Hybrid	37277	390	36887
Nojave Deser	2023	LDT1	Aggregate	5	Gasoline	356	356	0
Nojave Deser	2023	LDT1	Aggregate	5	Diesel	0	0	0
Nojave Deser	2023	LDT1	Aggregate	5	Electricity	56	0	56
Nojave Deser	2023	LDT1	Aggregate	5	Plug-in Hybrid	13	0	13
Nojave Deser	2023	LDT1	Aggregate	10	Gasoline	1733	1733	0
Nojave Deser	2023	LDT1	Aggregate	10	Diesel	0	0	0
Nojave Deser	2023	LDT1	Aggregate	10	Electricity	90	0	90
Лојаve Deser	2023	LDT1	Aggregate	10	Plug-in Hybrid	52	1	51
Лоjave Deser	2023	LDT1	Aggregate	15	Gasoline	2239	2239	0
√ojave Deser	2023	LDT1	Aggregate	15	Diesel	1	1	0
√ojave Deser	2023	LDT1	Aggregate	15	Electricity	201	0	201
√ojave Deser	2023	LDT1	Aggregate	15	Plug-in Hybrid	126	1	125
√lojave Deser	2023	LDT2	Aggregate	5	Gasoline	1772	1772	0
√lojave Deser	2023	LDT2	Aggregate	5	Diesel	6	6	0
√lojave Deser	2023	LDT2	Aggregate	5	Electricity	744	0	744
√lojave Deser	2023	LDT2	Aggregate	5	Plug-in Hybrid	461	7	455
√ojave Deser	2023	LDT2	Aggregate	10	Gasoline	8096	8096	0
√lojave Deser	2023	LDT2	Aggregate	10	Diesel	25	25	0
∕lojave Deser	2023	LDT2	Aggregate	10	Electricity	1190	0	1190
∕lojave Deser	2023	LDT2	Aggregate	10	Plug-in Hybrid	1847	29	1819
∕lojave Deser	2023	LDT2	Aggregate	15	Gasoline	10840	10840	0
∕lojave Deser	2023	LDT2	Aggregate	15	Diesel	35	35	0
Лојаve Deser	2023	LDT2	Aggregate	15	Electricity	2651	0	2651
Лоjave Deser	2023	LDT2	Aggregate	15	Plug-in Hybrid	4490	40	4451
Nojave Deser	2024	LDA	Aggregate	5	Gasoline	4337	4337	0
Nojave Deser	2024	LDA	Aggregate	5	Diesel	12	12	0
Nojave Deser	2024	LDA	Aggregate	5	Electricity	24961	0	24961
Nojave Deser	2024	LDA	Aggregate	5	Plug-in Hybrid	4334	66	4268
Nojave Deser	2024	LDA	Aggregate	10	Gasoline	23734	23734	0
Nojave Deser	2024	LDA	Aggregate	10	Diesel	73	73	0
Nojave Deser	2024	LDA	Aggregate	10	Electricity	39932	0	39932
Aojave Deser	2024 2024	LDA LDA	Aggregate	10 15	Plug-in Hybrid Gasoline	17411 44227	346 44227	17065
Nojave Deser Nojave Deser	2024	LDA	Aggregate	15	Diesel	135	135	0 0
Nojave Deser	2024	LDA	Aggregate Aggregate	15	Electricity	88933	0	88933
Nojave Deser	2024	LDA	Aggregate	15	Plug-in Hybrid	42416	649	41767
Nojave Deser	2024	LDT1	Aggregate	5	Gasoline	345	345	0
Nojave Deser	2024	LDT1	Aggregate	5	Diesel	0	0	0
Nojave Deser	2024	LDT1	Aggregate	5	Electricity	81	0	81
Nojave Deser	2024	LDT1	Aggregate	5	Plug-in Hybrid	21	0	21
Nojave Deser	2024	LDT1	Aggregate	10	Gasoline	1789	1789	0
Лоjave Deser	2024	LDT1	Aggregate	10	Diesel	0	0	0
Nojave Deser	2024	LDT1	Aggregate	10	Electricity	129	0	129
Nojave Deser	2024	LDT1	Aggregate	10	Plug-in Hybrid	84	1	82
Лоjave Deser	2024	LDT1	Aggregate	15	Gasoline	3364	3364	0
√ojave Deser	2024	LDT1	Aggregate	15	Diesel	1	1	0
√ojave Deser	2024	LDT1	Aggregate	15	Electricity	288	0	288
√lojave Deser	2024	LDT1	Aggregate	15	Plug-in Hybrid	204	2	201
Лоjave Deser	2024	LDT2	Aggregate	5	Gasoline	1800	1800	0
Лојаve Deser	2024	LDT2	Aggregate	5	Diesel	6	6	0
Лојаve Deser	2024	LDT2	Aggregate	5	Electricity	1093	0	1093
Лојаve Deser	2024	LDT2	Aggregate	5	Plug-in Hybrid	589	8	581
Лоjave Deser	2024	LDT2	Aggregate	10	Gasoline	8733	8733	0
Лоjave Deser	2024	LDT2	Aggregate	10	Diesel	28	28	0
√ojave Deser	2024	LDT2	Aggregate	10	Electricity	1748	0	1748
√ojave Deser	2024	LDT2	Aggregate	10	Plug-in Hybrid	2360	37	2323
√ojave Deser	2024	LDT2	Aggregate	15	Gasoline	16578	16578	0
Лојаve Deser	2024	LDT2	Aggregate	15	Diesel	54	54	0
Лојаve Deser	2024	LDT2	Aggregate	15	Electricity	3894	0	3894
Лојаve Deser	2024	LDT2	Aggregate	15	Plug-in Hybrid	5756	70	5686

Final Weighted

							Running (RU	JNEX, PMTW	/, PMBW) gra	ms per mile
Weight VMT	Weight Trips	Lookup	ROG	TOG	NOx	CO	PM10 Ex	PM10 D	PM2.5 Ex	PM2.5 D
0.1		2023LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.0		2023LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.6		2023LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.1		2023LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.3		2023LDA-LDTOnsite10	0	0	0	0	0	0	0	0
0.0		2023LDA-LDTOnsite10	0	0	0	0	0	0	0	0
0.4 0.2		2023LDA-LDTOnsite10 2023LDA-LDTOnsite10	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
0.2		2023LDA-LDTOnsite15	0	0	0	0	0	0	0	0
0.0		2023LDA-LDTOnsite15	0	0	0	0	0	0	0	0
0.5		2023LDA-LDTOnsite15	0	0	0	0	0	0	0	0
0.2		2023LDA-LDTOnsite15	0	0	0	0	0	0	0	0
0.0		2023LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.0		2023LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.0		2023LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.0		2023LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.0		2023LDA-LDTOnsite10	0	0	0	0	0	0	0	0
0.0		2023LDA-LDTOnsite10	0	0	0	0	0	0	0	0
0.0		2023LDA-LDTOnsite10	0	0	0	0	0	0	0	0
0.0 0.0		2023LDA-LDTOnsite10 2023LDA-LDTOnsite15	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
0.0		2023LDA-LDTOnsite15	0	0	0	0	0	0	0	0
0.0		2023LDA-LDTOnsite15	0	0	0	0	0	0	0	0
0.0		2023LDA-LDTOnsite15	0	0	0	0	0	0	0	0
0.1		2023LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.0		2023LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.0		2023LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.0		2023LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.1		2023LDA-LDTOnsite10	0	0	0	0	0	0	0	0
0.0		2023LDA-LDTOnsite10	0	0	0	0	0	0	0	0
0.0		2023LDA-LDTOnsite10	0	0	0	0	0	0	0	0
0.0		2023LDA-LDTOnsite10	0	0	0	0	0	0	0	0
0.1 0.0		2023LDA-LDTOnsite15 2023LDA-LDTOnsite15	0	0 0	0	0 0	0 0	0 0	0 0	0 0
0.0		2023LDA-LDTOnsite15	0	0	0	0	0	0	0	0
0.0		2023LDA-LDTOnsite15	0	0	0	0	0	0	0	0
0.1		2024LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.0		2024LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.7		2024LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.1		2024LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.2		2024LDA-LDTOnsite10	0	0	0	0	0	0	0	0
0.0		2024LDA-LDTOnsite10	0	0	0	0	0	0	0	0
0.4		2024LDA-LDTOnsite10	0	0	0	0	0	0	0	0
0.2		2024LDA-LDTOnsite10	0	0	0	0	0	0	0	0
0.2		2024LDA-LDTOnsite15	0	0	0	0	0	0	0	0
0.0 0.4		2024LDA-LDTOnsite15 2024LDA-LDTOnsite15	0	0 0	0	0 0	0 0	0	0 0	0
0.2		2024LDA-LDTOnsite15	0	0	0	0	0	0	0	0
0.0		2024LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.0		2024LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.0		2024LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.0		2024LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.0		2024LDA-LDTOnsite10	0	0	0	0	0	0	0	0
0.0		2024LDA-LDTOnsite10	0	0	0	0	0	0	0	0
0.0		2024LDA-LDTOnsite10	0	0	0	0	0	0	0	0
0.0		2024LDA-LDTOnsite10	0	0	0	0	0	0	0	0
0.0 0.0		2024LDA-LDTOnsite15 2024LDA-LDTOnsite15	0	0	0	0	0	0	0	0
0.0		2024LDA-LDTOnsite15	0	0 0	0 0	0 0	0 0	0 0	0 0	0
0.0		2024LDA-LDTOnsite15	0	0	0	0	0	0	0	0
0.0		2024LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.0		2024LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.0		2024LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.0		2024LDA-LDTOnsite5	0	0	0	0	0	0	0	0
0.1		2024LDA-LDTOnsite10	0	0	0	0	0	0	0	0
0.0		2024LDA-LDTOnsite10	0	0	0	0	0	0	0	0
0.0		2024LDA-LDTOnsite10	0	0	0	0	0	0	0	0
0.0		2024LDA-LDTOnsite10	0	0	0	0	0	0	0	0
0.1		2024LDA-LDTOnsite15 2024LDA-LDTOnsite15	0	0	0	0 0	0	0	0	0
0.0 0.0		2024LDA-LDTOnsite15 2024LDA-LDTOnsite15	0	0 0	0	0	0	0 0	0 0	0
0.0		2024LDA-LDTOnsite15	0	0	0	0	0	0	0	0
5.0				•	J	Ü	Ü	•	•	3

				_Runex	_Runex	_Runex	_Runex	PM10_Runex
SOX	CO2	CH4	N2O	ROG	TOG	NOx	CO	Run PM10 Ex
0	98	0	0	0	0	0	2	0
0	0	0	0	0	0	0	4	0
0	0	0	0	0	0	0	0	0
0	2	0	0	0	0	0	0	0
0	157	0	0	0	0	0	2	0
0	0	0	0	0	0	0	3	0
0	0	0	0	0	0	0	0	0
0 0	2 84	0 0	0	0	0	0	0	0 0
0	0	0	0 0	0	0 0	0 0	1 2	0
0	0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0	0
0	10	0	0	0	0	0	5	0
0	0	0	0	1	1	1	5	1
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	15	0	0	0	0	0	5	0
0	0	0	0	1	1	1	3	1
0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
0	8	0	0	0	0	0	4	0
0	0	0	0	1	1	1	3	1
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	49	0	0	0	0	0	2	0
0	0	0	0	0	0	0	3	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0 0	70 0	0 0	0 0	0 0	0 0	0 0	2 2	0 0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	40	0	0	0	0	0	2	0
0	0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	80	0	0	0	0	0	2	0
0	0	0	0	0	0	0	4	0
0 0	0 1	0 0						
0	141	0	0	0	0	0	2	0
0	0	0	0	0	0	0	3	0
0	0	0	0	0	0	0	0	0
0	2	0	0	0	0	0	0	0
0	100	0	0	0	0	0	1	0
0	0	0	0	0	0	0	2	0
0	0	0	0	0	0	0	0	0
0	2	0	0	0	0	0	0	0
0 0	8 0	0 0	0 0	0 1	0 1	0 1	5 5	0 1
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	13	0	0	0	0	0	4	0
0	0	0	0	1	1	1	3	1
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	9	0	0	0	0	0	4	0
0	0	0	0	1	1	1	3	1
0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
0	41	0	0	0	0	0	2	0
0	0	0	0	0	0	0	3	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	64	0	0	0	0	0	2	0
0	0	0	0	0	0	0	2	0
0	0	0	0	0	0	0	0	0
0	0 46	0	0	0	0	0	0	0
0 0	46 0	0 0	0 0	0 0	0 0	0 0	2 1	0 0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0

PM10_PMBW	PM2.5_Runex	PM2.5_PMBW	_Runex	_Runex	_Runex	_Runex	
PM10 D	PM2.5 Ex	PM2.5 D	SOX	CO2	CH4	N2O	NOx_RUNEX
0	0	0	0	707	0	0	0
0	0	0	0	609	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	14	0	0	0
0	0	0	0	580	0	0	0
0	0	0	0	506	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	12	0	0	0
0	0 0	0	0 0	471 417	0 0	0 0	0
0	0	0	0	0	0	0	0
0	0	0	0	5	0	0	0
0	0	0	0	847	0	0	0
0	1	0	0	1054	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	11	0	0	0
0	0	0	0	694	0	0	0
0	1	0	0	887	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	9	0	0	0
0	0	0	0	565 735	0	0	0
0	1 0	0	0 0	735 0	0 0	0 0	1
0	0	0	0	4	0	0	0
0	0	0	0	876	0	0	0
0	0	0	0	795	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	12	0	0	0
0	0	0	0	720	0	0	0
0	0	0	0	666	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	9	0	0	0
0	0	0	0	585	0	0	0
0	0	0	0	554	0	0	0
0	0 0	0	0 0	0 4	0 0	0 0	0
0	0	0	0	696	0	0	0
0	0	0	0	605	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	13	0	0	0
0	0	0	0	570	0	0	0
0	0	0	0	502	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	12	0	0	0
0	0	0	0	466	0	0	0
0	0	0	0	413	0	0	0
0	0 0	0 0	0 0	0 7	0 0	0 0	0
0	0	0	0	835	0	0	0
0	1	0	0	1053	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	11	0	0	0
0	0	0	0	684	0	0	0
0	1	0	0	887	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	9	0	0	0
0	0	0	0	558	0	0	0
0	1	0	0	735	0	0	0
0 0	0 0	0 0	0 0	0 6	0 0	0 0	0
0	0	0	0	858	0	0	0
0	0	0	0	782	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	11	0	0	0
0	0	0	0	704	0	0	0
0	0	0	0	656	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	9	0	0	0
0	0	0	0	575	0	0	0
0	0	0	0	545	0	0	0
0	0 0	0 0	0 0	0 6	0 0	0 0	0
U	U	U	U	O	U	U	U

PM2.5_RUNEX	PM10_RUNEX	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	SOx_RUNEX
0	0	707	0	0	0	0	2	0
0	0 0	609 0	0 0	0 0	0 0	0 0	4 0	0 0
0	0	14	0	0	0	0	0	0
0	0	580	0	0	0	0	2	0
0	0	506	0	0	0	0	3	0
0	0	0	0	0	0	0	0	0
0	0	12	0	0	0	0	0	0
0	0	471	0	0	0	0	1	0
0	0	417	0	0	0	0	2	0
0	0 0	0 5	0	0	0	0	0 0	0
0	0	847	0	0	0	0	5	0 0
1	1	1054	0	0	1	1	5	0
0	0	0	0	0	0	0	0	0
0	0	11	0	0	0	0	0	0
0	0	694	0	0	0	0	5	0
1	1	887	0	0	1	1	3	0
0	0	0	0	0	0	0	0	0
0	0 0	9 565	0	0	0	0 0	0	0 0
1	1	735	0	0	1	1	3	0
0	0	0	0	0	0	0	0	0
0	0	4	0	0	0	0	0	0
0	0	876	0	0	0	0	2	0
0	0	795	0	0	0	0	3	0
0	0	0	0	0	0	0	0	0
0	0	12	0	0	0	0	0	0
0	0	720 666	0	0	0	0	2	0
0	0 0	0	0	0	0	0 0	2 0	0 0
0	0	9	0	0	0	0	0	0
0	0	585	0	0	0	0	2	0
0	0	554	0	0	0	0	1	0
0	0	0	0	0	0	0	0	0
0	0	4	0	0	0	0	0	0
0	0	696	0	0	0	0	2	0
0	0 0	605 0	0 0	0 0	0	0 0	4 0	0 0
0	0	13	0	0	0	0	0	0
0	0	570	0	0	0	0	2	0
0	0	502	0	0	0	0	3	0
0	0	0	0	0	0	0	0	0
0	0	12	0	0	0	0	0	0
0	0	466	0	0	0	0	1	0
0	0	413	0	0	0	0	2	0
0	0 0	0 7	0 0	0 0	0 0	0 0	0 0	0 0
0	0	835	0	0	0	0	5	0
1	1	1053	0	0	1	1	5	0
0	0	0	0	0	0	0	0	0
0	0	11	0	0	0	0	0	0
0	0	684	0	0	0	0	4	0
1	1	887	0	0	1	1	3	0
0	0 0	0 9	0 0	0 0	0 0	0 0	0 0	0 0
0	0	558	0	0	0	0	4	0
1	1	735	0	0	1	1	3	0
0	0	0	0	0	0	0	0	0
0	0	6	0	0	0	0	0	0
0	0	858	0	0	0	0	2	0
0	0	782	0	0	0	0	3	0
0	0 0	0 11	0 0	0 0	0 0	0 0	0 0	0 0
0	0	704	0	0	0	0	2	0
0	0	656	0	0	0	0	2	0
0	0	0	0	0	0	0	0	0
0	0	9	0	0	0	0	0	0
0	0	575	0	0	0	0	2	0
0	0	545	0	0	0	0	1	0
0	0	0	0	0	0	0	0	0
0	0	6	0	0	0	0	0	0

NH3_RUNEX	PM10_PMBW	PM2.5_PMBW	Fuel Consumption	n Energy Consumptio	1
0	0	0	75	0	2
0	0	0	54	0	3
0	0	0	0	630004	4
0	0	0	1	465090	5
0	0	0	61	0	6
0	0	0	45	0	7
0	0	0	0	425185	8
0	0	0	1	328658	9
0	0	0	50	0	10
0	0	0	37	0	11
0	0	0	0	357685	12
0	0	0	1	287139	13
0	0	0	89	0	14
0	0	0	94	0	15
0	0	0	0	630004	16
0	0	0	1	466449	17
0	0	0	73	0	18
0	0	0	79	0	19
0	0	0	0	425185	20
0	0	0	1	330287	21
0	0	0	60	0	22
0	0	0	66	0	23
0	0	0	0	357685	24
0	0	0	0	287765	25
0	0	0	92	0	26
0	0	0	71	0	27
0	0	0	0	630004	28
0	0	0	1	466009	29
0	0	0	76 60	0	30
0	0	0	60	0 425185	31
0	0	0	0		32
0	0 0	0	1 62	330062	33 34
0 0	0	0 0	49	0 0	35
0	0	0		357685	36
			0		
0 0	0 0	0 0	0 73	287618	37 38
0	0	0	73 54	0 0	39
0	0	0	0	630004	40
0	0	0	1	465545	41
0	0	0	60	0	42
0	0	0	45	0	43
0	0	0	0	425185	44
0	0	0	1	328616	45
0	0	0	49	0	45
0	0	0	37	0	47
0	0	0	0	357685	48
0	0	0	1	285734	49
0	0	0	88	0	50
0	0	0	94	0	51
0	0	0	0	630004	52
0	0	0	1	466873	53
0	0	0	72	0	54
0	0	0	79	0	55
0	0	0	0	425185	56
0	0	0	1	330321	57
0	0	0	<u>-</u> 59	0	58
0	0	0	66	0	59
0	0	0	0	357685	60
0	0	0	1	286827	61
0	0	0	90	0	62
0	0	0	70	0	63
0	0	0	0	630004	64
0	0	0	1	466422	65
0	0	0	74	0	66
0	0	0	59	0	67
0	0	0	0	425185	68
0	0	0	1	330064	69
0	0	0	61	0	70
0	0	0	49	0	71
0	0	0	0	357685	72
0	0	0	1	286639	73

Source: EMFAC2021 (v1.0.1) Emission Rates

Region Type: Air Basin Region: Mojave Desert Calendar Year: 2023, 2024

Season: Annual

Vehicle Classification: EMFAC2011 Categories

Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK

Vehicle Type: LDA-LDT

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips
Mojave Desert	2023	LDA	Aggregate	Aggregate	Gasoline	474993	20324249	20324249	0	2197295
Mojave Desert	2023	LDA	Aggregate	Aggregate	Diesel	1843	65455	65455	0	7897
Mojave Desert	2023	LDA	Aggregate	Aggregate	Electricity	16359	782828	0	782828	82281
Mojave Desert	2023	LDA	Aggregate	Aggregate	Plug-in Hybrid	11117	566530	288016	278514	45969
Mojave Desert	2023	LDT1	Aggregate	Aggregate	Gasoline	49888	1718715	1718715	0	213193
Mojave Desert	2023	LDT1	Aggregate	Aggregate	Diesel	30	437	437	0	86
Mojave Desert	2023	LDT1	Aggregate	Aggregate	Electricity	53	2219	0	2219	254
Mojave Desert	2023	LDT1	Aggregate	Aggregate	Plug-in Hybrid	32	1754	809	945	132
Mojave Desert	2023	LDT2	Aggregate	Aggregate	Gasoline	202166	8429680	8429680	0	938857
Mojave Desert	2023	LDT2	Aggregate	Aggregate	Diesel	610	27442	27442	0	2925
Mojave Desert	2023	LDT2	Aggregate	Aggregate	Electricity	774	29300	0	29300	3973
Mojave Desert	2023	LDT2	Aggregate	Aggregate	Plug-in Hybrid	1219	64544	30938	33606	5039
Mojave Desert	2024	LDA	Aggregate	Aggregate	Gasoline	470291	20353191	20353191	0	2173385
Mojave Desert	2024	LDA	Aggregate	Aggregate	Diesel	1717	60723	60723	0	7316
Mojave Desert	2024	LDA	Aggregate	Aggregate	Electricity	19765	982862	0	982862	99080
Mojave Desert	2024	LDA	Aggregate	Aggregate	Plug-in Hybrid	12242	626193	310837	315356	50623
Mojave Desert	2024	LDT1	Aggregate	Aggregate	Gasoline	48144	1683035	1683035	0	205660
Mojave Desert	2024	LDT1	Aggregate	Aggregate	Diesel	27	388	388	0	76
Mojave Desert	2024	LDT1	Aggregate	Aggregate	Electricity	69	3185	0	3185	337
Mojave Desert	2024	LDT1	Aggregate	Aggregate	Plug-in Hybrid	50	2750	1229	1521	207
Mojave Desert	2024	LDT2	Aggregate	Aggregate	Gasoline	204930	8674613	8674613	0	952176
Mojave Desert	2024	LDT2	Aggregate	Aggregate	Diesel	640	29051	29051	0	3067
Mojave Desert	2024	LDT2	Aggregate	Aggregate	Electricity	1137	43031	0	43031	5815
Mojave Desert	2024	LDT2	Aggregate	Aggregate	Plug-in Hybrid	1523	80502	37574	42928	6298

Final Weighted

Cand RUNLOSS, g/vehicle/day for IDLEX and DIURN

								Runnir
Energy Consumption	Weight VMT	Weight Trips	Lookup	ROG	TOG	NOx	СО	PM10 Ex
0	0.63	0.63	2023LDA-LDT	0	0	0	1	0
0	0.00	0.00	2023LDA-LDT	0	0	0	0	0
302236	0.02	0.02	2023LDA-LDT	0	0	0	0	0
84120	0.02	0.01	2023LDA-LDT	0	0	0	0	0
0	0.05	0.06	2023LDA-LDT	0	0	0	0	0
0	0.00	0.00	2023LDA-LDT	0	0	0	0	0
857	0.00	0.00	2023LDA-LDT	0	0	0	0	0
286	0.00	0.00	2023LDA-LDT	0	0	0	0	0
0	0.26	0.27	2023LDA-LDT	0	0	0	0	0
0	0.00	0.00	2023LDA-LDT	0	0	0	0	0
11312	0.00	0.00	2023LDA-LDT	0	0	0	0	0
10150	0.00	0.00	2023LDA-LDT	0	0	0	0	0
0	0.63	0.62	2024LDA-LDT	0	0	0	0	0
0	0.00	0.00	2024LDA-LDT	0	0	0	0	0
379466	0.03	0.03	2024LDA-LDT	0	0	0	0	0
95247	0.02	0.01	2024LDA-LDT	0	0	0	0	0
0	0.05	0.06	2024LDA-LDT	0	0	0	0	0
0	0.00	0.00	2024LDA-LDT	0	0	0	0	0
1230	0.00	0.00	2024LDA-LDT	0	0	0	0	0
459	0.00	0.00	2024LDA-LDT	0	0	0	0	0
0	0.27	0.27	2024LDA-LDT	0	0	0	0	0
0	0.00	0.00	2024LDA-LDT	0	0	0	0	0
16613	0.00	0.00	2024LDA-LDT	0	0	0	0	0
12966	0.00	0.00	2024LDA-LDT	0	0	0	0	0

ng (RUNEX, PMTW	/, PMBW) grams p	er mile						
PM10 D	PM2.5 Ex	PM2.5 D	SOX	CO2	CH4	N2O	ROG	TOG
0	0	0	0	186	0	0	2	2
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	2	0	0	0	0
0	0	0	0	19	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	96	0	0	1	1
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	180	0	0	1	1
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	3	0	0	0	0
0	0	0	0	18	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	95	0	0	1	1
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0

		Process (IDLEX, STR	EX, TOTEX, DIURI	N, HTSK, RUNLS, RE	STL) grams per trip)		
NOx	CO	PM10 Ex	PM10 D	PM2.5 Ex	PM2.5 D	SOX	CO2	CH4
0	2	0	0	0	0	0	45	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	6	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	25	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	2	0	0	0	0	0	44	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	5	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	24	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0

PM10 PMTW

	_Runex	_Runex	_Runex	_Runex	PM10_Runex	PM10_PMBW	PIVI2.5_Runex
					Ru	nning (RUNEX, PMTW	/, PMBW) grams per r
N2O	ROG	TOG	NOx	CO	PM10 Ex	PM10 D	PM2.5 Ex
0	0	0	0	1	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	2	0	0	0
0	0	0	2	2	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	1	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	1	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	2	0	0	0
0	0	0	2	2	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	1	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

_DIURN _DIURN
_RUNLOSS _RUNLOSS
_HOTSOAK _HOTSOAK
STREX STREX

PM2.5_PMTW __STREX __STREX __STRE PM2.5_PMBW __Runex __Runex __Runex __Runex __IDLEX __IDLEX __IDLEX

nile							
PM2.5 D	SOX	CO2	CH4	N2O	ROG	TOG	NOx
0	0	293	0	0	2	2	0
0	0	242	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	133	0	0	1	1	0
0	0	351	0	0	7	7	1
0	0	427	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	120	0	0	1	1	0
0	0	364	0	0	3	3	0
0	0	323	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	125	0	0	1	1	0
0	0	288	0	0	2	2	0
0	0	240	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	130	0	0	1	1	0
0	0	346	0	0	6	6	1
0	0	426	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	117	0	0	1	1	0
0	0	356	0	0	3	3	0
0	0	318	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	122	0	0	1	1	0

_STREX	_STREX		_STREX		_STREX	_STREX	_STREX
_IDLEX	_IDLEX		_IDLEX		_IDLEX	_IDLEX	_IDLEX
Process (IDLEX,	STREX, TOTEX, DIURI	N, HTSK, RUNLS, REST	L) grams per trip				
СО	PM10	PM10 D	PM2.5	PM2.5 D	SOX	CO2	CH4
3	0		0		0	72	0
0	0		0		0	0	0
0	0		0		0	0	0
1	0		0		0	66	0
8	0		0		0	95	0
0	0		0		0	0	0
0	0		0		0	0	0
1	0		0		0	72	0
4	0		0		0	92	0
0	0		0		0	0	0
0	0		0		0	0	0
1	0		0		0	79	0
3	0		0		0	71	0
0	0		0		0	0	0
0	0		0		0	0	0
1	0		0		0	66	0
7	0		0		0	93	0
0	0		0		0	0	0
0	0		0		0	0	0
1	0		0		0	71	0
4	0		0		0	89	0
0	0		0		0	0	0
0	0		0		0	0	0
1	0		0		0	78	0

_STREX

N2O	NOx_RUNEX	NOx_IDLEX	NOx_STREX	M2.5_RUNE	PM2.5_IDLEX	M2.5_STRE	M2.5_PMTV	M2.5_PMBV	M10_RUNE	PM10_IDLEX	PM10_STREX
0	0.05	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.27	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.02	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.23	0.00	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	1.72	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.25	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.09	0.00	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.06	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.05	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.25	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.02	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.21	0.00	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	1.71	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.25	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.08	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.05	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

:	M10_PMTW2M1	LO_PMBVCO2	_RUNEX	CO2_IDLEX	CO2_STREX	CH4_RUNEX	CH4_IDLEX	CH4_STREX	N2O_RUNEX	N2O_IDLEX	N2O_STREX F	ROG_RUNEX	ROG_IDLEX
	0.01	0.01	292.99	0.00	72.23	0.00	0.00	0.08	0.01	0.00	0.03	0.01	0.00
	0.01	0.01	241.79	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.03	0.00
	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.01	0.00	133.03	0.00	66.40	0.00	0.00	0.04	0.00	0.00	0.02	0.00	0.00
	0.01	0.01	351.34	0.00	94.82	0.01	0.00	0.15	0.02	0.00	0.05	0.05	0.00
	0.01	0.01	426.55	0.00	0.00	0.01	0.00	0.00	0.07	0.00	0.00	0.31	0.00
	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.01	0.00	120.36	0.00	72.32	0.00	0.00	0.04	0.00	0.00	0.02	0.00	0.00
	0.01	0.01	363.87	0.00	91.51	0.00	0.00	0.09	0.01	0.00	0.04	0.01	0.00
	0.01	0.01	323.22	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.01	0.00
	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.01	0.00	125.08	0.00	78.74	0.00	0.00	0.04	0.00	0.00	0.02	0.00	0.00
	0.01	0.01	288.47	0.00	70.88	0.00	0.00	0.07	0.01	0.00	0.03	0.01	0.00
	0.01	0.01	239.96	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.03	0.00
	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.01	0.00	130.03	0.00	65.65	0.00	0.00	0.04	0.00	0.00	0.02	0.00	0.00
	0.01	0.01	346.39	0.00	92.84	0.01	0.00	0.14	0.01	0.00	0.04	0.04	0.00
	0.01	0.01	426.18	0.00	0.00	0.01	0.00	0.00	0.07	0.00	0.00	0.31	0.00
	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.01	0.00	116.77	0.00	71.29	0.00	0.00	0.04	0.00	0.00	0.02	0.00	0.00
	0.01	0.01	356.44	0.00	89.34	0.00	0.00	0.09	0.01	0.00	0.04	0.01	0.00
	0.01	0.01	318.09	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.01	0.00
	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.01	0.00	121.89	0.00	77.86	0.00	0.00	0.04	0.00	0.00	0.02	0.00	0.00

ROG_STREX OG	_HOTSOA.OG_	_RUNLOS ROG	_DIURNTO	G_RUNEX	TOG_IDLEX	TOG_STREX OG	_HOTSOA'OC	_RUNLOS TO	G_DIURN NH	3_RUNEX CO	_RUNEX	CO_IDLEX
0.36	0.10	0.26	1.75	0.02	0.00	0.39	0.10	0.26	1.75	0.03	0.83	0.00
0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.17	0.04	0.04	0.53	0.00	0.00	0.19	0.04	0.04	0.53	0.02	0.21	0.00
0.82	0.27	0.81	4.71	0.07	0.00	0.90	0.27	0.81	4.71	0.04	2.25	0.00
0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.00	0.00	2.04	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.17	0.02	0.02	0.32	0.00	0.00	0.19	0.02	0.02	0.32	0.02	0.19	0.00
0.44	0.10	0.27	1.83	0.02	0.00	0.49	0.10	0.27	1.83	0.04	0.99	0.00
0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.17	0.03	0.02	0.36	0.00	0.00	0.19	0.03	0.02	0.36	0.02	0.20	0.00
0.33	0.10	0.25	1.69	0.01	0.00	0.36	0.10	0.25	1.69	0.03	0.78	0.00
0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.17	0.04	0.04	0.53	0.00	0.00	0.19	0.04	0.04	0.53	0.02	0.21	0.00
0.76	0.25	0.77	4.49	0.06	0.00	0.84	0.25	0.77	4.49	0.04	2.07	0.00
0.00	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.00	0.00	2.03	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.17	0.02	0.02	0.31	0.00	0.00	0.19	0.02	0.02	0.31	0.02	0.19	0.00
0.41	0.09	0.26	1.77	0.02	0.00	0.45	0.09	0.26	1.77	0.04	0.92	0.00
0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.17	0.03	0.02	0.35	0.00	0.00	0.19	0.03	0.02	0.35	0.02	0.20	0.00

CO_STREX	SOx_RUNEX	SOx_IDLEX	SOx_STREX	1
3.45	0.00	0.00	0.00	2
0.00	0.00	0.00	0.00	3
0.00	0.00	0.00	0.00	4
1.31	0.00	0.00	0.00	5
7.90	0.00	0.00	0.00	6
0.00	0.00	0.00	0.00	7
0.00	0.00	0.00	0.00	8
1.30	0.00	0.00	0.00	9
4.16	0.00	0.00	0.00	10
0.00	0.00	0.00	0.00	11
0.00	0.00	0.00	0.00	12
1.30	0.00	0.00	0.00	13
3.25	0.00	0.00	0.00	14
0.00	0.00	0.00	0.00	15
0.00	0.00	0.00	0.00	16
1.31	0.00	0.00	0.00	17
7.37	0.00	0.00	0.00	18
0.00	0.00	0.00	0.00	19
0.00	0.00	0.00	0.00	20
1.30	0.00	0.00	0.00	21
3.90	0.00	0.00	0.00	22
0.00	0.00	0.00	0.00	23
0.00	0.00	0.00	0.00	24
1.30	0.00	0.00	0.00	25

Source: EMFAC2021 (v1.0.1) Emission Rates

Region Type: Air Basin Region: Mojave Desert Calendar Year: 2023, 2024

Season: Annual

Vehicle Classification: EMFAC2011 Categories

Units: miles/day for CVMT and EVMT, g/mile for RUNEX, PMBW and PMTW, mph for Speed

Onsite

Region	Calendar Year		Vehicle Category	Model Year	Speed	Fuel	Total VMT	CVMT	EVMT	Weight VMT	Weight Trips
Лоjave Deser	2023	T6	T6 instate heavy	Aggregate	5	Diesel	8	8	0	1	1
√ojave Deser	2023	T6	T6 instate heavy	Aggregate	10	Diesel	111	111	0	1	1
√lojave Deser	2023	T6	T6 instate heavy	Aggregate	15	Diesel	224	224	0	1	1
√ojave Deser	2023	T7	T7 Single	Aggregate	5	Diesel	2	2	0	1	1
√lojave Deser	2023	T7	T7 Single	Aggregate	10	Diesel	79	79	0	1	1
√ojave Deser	2023	T7	T7 Single	Aggregate	15	Diesel	163	163	0	1	1
√lojave Deser	2024	T6	T6 instate heavy	Aggregate	5	Diesel	9	9	0	1	1
√lojave Deser	2024	T6	T6 instate heavy	Aggregate	10	Diesel	123	123	0	1	1
√lojave Deser	2024	T6	T6 instate heavy	Aggregate	15	Diesel	248	248	0	1	1
√lojave Deser	2024	T7	T7 Single	Aggregate	5	Diesel	2	2	0	1	1
√lojave Deser	2024	T7	T7 Single	Aggregate	10	Diesel	79	79	0	1	1
√lojave Deser	2024	T7	T7 Single	Aggregate	15	Diesel	216	216	0	1	1

Final Weighted

					Running (Rl	JNEX, PMTW	/, PMBW) gra	ms per mile			
Lookup	ROG	TOG	NOx	CO	PM10 Ex	PM10 D	PM2.5 Ex	PM2.5 D	SOX	CO2	CH4
2023T6Onsite5	0	0	4	1	0	0	0	0	0	2,425	0
2023T6Onsite10	0	0	3	0	0	0	0	0	0	2,015	0
2023T6Onsite15	0	0	2	0	0	0	0	0	0	1,586	0
2023T7Onsite5	0	0	8	1	0	0	0	0	0	3,528	0
2023T7Onsite10	0	0	6	1	0	0	0	0	0	3,020	0
2023T7Onsite15	0	0	4	0	0	0	0	0	0	2,450	0
2024T6Onsite5	0	0	4	1	0	0	0	0	0	2,421	0
2024T6Onsite10	0	0	3	0	0	0	0	0	0	2,006	0
2024T6Onsite15	0	0	2	0	0	0	0	0	0	1,579	0
2024T7Onsite5	0	0	8	1	0	0	0	0	0	3,472	0
2024T7Onsite10	0	0	6	1	0	0	0	0	0	2,996	0
2024T7Onsite15	0	0	4	0	0	0	0	0	0	2,424	0

	_Runex	_Runex	_Runex	_Runex	PM10_Runex	PM10_PMBW	PM2.5_Runex
					Rui	nning (RUNEX, PMTW	/, PMBW) grams per r
N2O	ROG	TOG	NOx	CO	PM10 Ex	PM10 D	PM2.5 Ex
0	0	0	4	1	0	0	0
0	0	0	3	0	0	0	0
0	0	0	2	0	0	0	0
1	0	0	8	1	0	0	0
0	0	0	6	1	0	0	0
0	0	0	4	0	0	0	0
0	0	0	4	1	0	0	0
0	0	0	3	0	0	0	0
0	0	0	2	0	0	0	0
1	0	0	8	1	0	0	0
0	0	0	6	1	0	0	0
0	0	0	4	0	0	0	0

PM2.5_PMBW	_Runex	_Runex	_Runex	_Runex				
nile								
PM2.5 D	SOX	CO2	CH4	N2O	NOx_RUNEX	PM2.5_RUNEX	PM10_RUNEX	CO2_RUNEX
0	0	2425	0	0	4	0	0	2425
0	0	2015	0	0	3	0	0	2015
0	0	1586	0	0	2	0	0	1586
0	0	3528	0	1	8	0	0	3528
0	0	3020	0	0	6	0	0	3020
0	0	2450	0	0	4	0	0	2450
0	0	2421	0	0	4	0	0	2421
0	0	2006	0	0	3	0	0	2006
0	0	1579	0	0	2	0	0	1579
0	0	3472	0	1	8	0	0	3472
0	0	2996	0	0	6	0	0	2996
0	0	2424	0	0	4	0	0	2424

CH4_RUNEX	N2O_RUNEX	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	SOx_RUNEX	NH3_RUNEX	PM10_PMBW	PM2.5_PMBW	Fuel Consumption
0	0	0	0	1	0	0	0	0	217
0	0	0	0	0	0	0	0	0	180
0	0	0	0	0	0	0	0	0	142
0	1	0	0	1	0	0	0	0	315
0	0	0	0	1	0	0	0	0	270
0	0	0	0	0	0	0	0	0	219
0	0	0	0	1	0	0	0	0	216
0	0	0	0	0	0	0	0	0	179
0	0	0	0	0	0	0	0	0	141
0	1	0	0	1	0	0	0	0	310
0	0	0	0	1	0	0	0	0	268
0	0	0	0	0	0	0	0	0	217

Energy Consumption	1
0	2
0	<i>3</i>
0	
0	5
0	6
0	7
0	8
0	9
0	10
0	11
0	12
0	13

Source: EMFAC2021 (v1.0.1) Emission Rates

Region Type: Air Basin Region: Mojave Desert Calendar Year: 2023, 2024

Season: Annual

Vehicle Classification: EMFAC2011 Categories

Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HC

Region	Calendar Yea	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips
√ojave Dese	r 2023	T6 instate heavy	Aggregate	Aggregate	Diesel	799	40585	40585	0	9491
√ojave Dese	r 2023	T7 Single	Aggregate	Aggregate	Diesel	833	50009	50009	0	7846
√ojave Dese	r 2024	T6 instate heavy	Aggregate	Aggregate	Diesel	827	41308	41308	0	9829
∕lojave Dese	r 2024	T7 Single	Aggregate	Aggregate	Diesel	857	50635	50635	0	8072

Final Weighted

OTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN

								Running (RU	JNEX, PMTW	, PMBW) gra	ms per mile
Energy Consumption	Weight VMT	Weight Trips	Lookup	ROG	TOG	NOx	CO	PM10 Ex	PM10 D	PM2.5 Ex	PM2.5 D
0	1	1	2023T6	0	0	1	0	0	0	0	0
0	1	1	2023T7	0	0	1	0	0	0	0	0
0	1	1	2024T6	0	0	1	0	0	0	0	0
0	1	1	2024T7	0	0	1	0	0	0	0	0

					Process (IDLEX, STREX, TOTEX, DIURN, HTSK, RUNLS, RESTL) grams per trip									
SOX	CO2	CH4	N2O	ROG	TOG	NOx	CO	PM10 Ex	PM10 D	PM2.5 Ex	PM2.5 D	SOX		
0	1,058	0	0	0	0	13	8	0	0	0	0	0		
0	1,611	0	0	2	2	25	27	0	0	0	0	0		
0	1,055	0	0	0	0	13	8	0	0	0	0	0		
0	1,608	0	0	2	2	25	27	0	0	0	0	0		

PM10 PMTM

			_nuriex	_nuriex	_nuriex	Nullex	FIVITO_NUTIEX	FIVITO_FIVIDVV	PIVIZ.J_NUITEX
							Runnir	ng (RUNEX, PMTW	/, PMBW) grams p
CO2	CH4	N2O	ROG	TOG	NOx	CO	PM10 Ex	PM10 D	PM2.5 Ex
2,262	0	0	0	0	1	0	0	0	0
4,662	0	1	0	0	1	0	0	0	0
2,261	0	0	0	0	1	0	0	0	0
4,636	0	1	0	0	1	0	0	0	0

_DIURN _DIURN _RUNLOSS _RUNLOSS HOTSOAK HOTSOAK

PM2.5_PMTW _STREX _STREX _STREX _STREX _STREX _STREX _STRE PM2.5_PMBW _Runex _Runex _Runex _Runex _IDLEX _I

e	r mile							Process (IDL	EX, STREX,	TOTEX, DIURN	I, HTSK, RUNI
	PM2.5 D	SOX	CO2	CH4	N2O	ROG	TOG	NOx	CO	PM10	PM10 D
Ī	0	0	1058	0	0	0	0	13	8	0	
	0	0	1611	0	0	2	2	25	27	0	
	0	0	1055	0	0	0	0	13	8	0	
	0	0	1608	0	0	2	2	25	27	0	

_STREX		_STREX	_STREX	_STREX	_STREX							
_IDLEX		_IDLEX	_IDLEX	_IDLEX	_IDLEX							
LS, RESTL) gra	ams per trip											
PM2.5	PM2.5 D	SOX	CO2	CH4	N2O	NOx_RUNE	NOx_IDLEX	NOx_STREX	PM2.5_RUN	PM2.5_IDLE	PM2.5_STRE	PM2.5_PMT
0		0	2262	0	0	1	11	2	0	0	0	0
0		0	4662	0	1	1	22	3	0	0	0	0
0		0	2261	0	0	1	11	2	0	0	0	0
0		0	4636	0	1	1	22	3	0	0	0	0

PM2.5_F	PMB PM10_	RUNE PM10_	IDLEX PM10_	STRE) PM10_	PMT\ PM10_	_PMB\	RUNEX CO	2_IDLEX	CO2_STREX	CH4_RUNEX CH	4_IDLEX	CH4_STREX
0	0	0	0	0	0	1	L058	2262	0	0	0	0
0	0	0	0	0	0	1	1611	4662	0	0	0	0
0	0	0	0	0	0	1	1055	2261	0	0	0	0
0	0	0	0	0	0	1	1608	4636	0	0	0	0

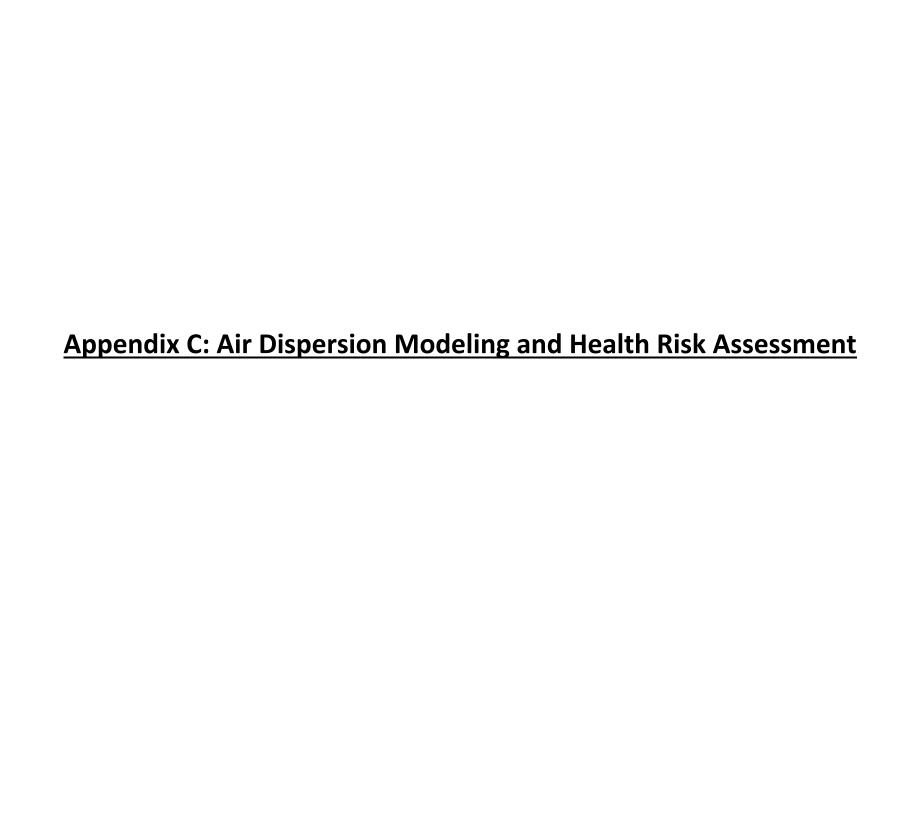
N2C	_RUNEX N2O_	_IDLEX_N2O	_STREX_ROG	_RUNEX ROG	_IDLEX_ROG	i_STREX_ROG	_HOTSC ROG	_RUNLC ROG	_DIURN TOG	_RUNEX TOG	_IDLEX_TOG	i_STREX TOG	_HOTSO
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	1	0	0	2	0	0	0	0	0	2	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	1	0	0	2	0	0	0	0	0	2	0	0

TOG	_RUNLC TOG_	_DIURN NH3	_RUNEX CO_	RUNEX C	O_IDLEX	CO_STREX	SOx_RUNEX SO	x_IDLEX	SOx_STREX	1
	0	0	0	0	8	0	0	0	0	2
	0	0	0	0	27	0	0	0	0	3
	0	0	0	0	8	0	0	0	0	4
	0	0	0	0	27	0	0	0	0	5

Appendix C

Air Dispersion Modeling and Health Risk Assessment Sheets

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HARP 2 - Emission Inventory (Off-road Equipment during construction)

<u>Schedule</u> 1/1/2024 1/30/2024 Phase1 21 Phase2 1/1/2024 5/1/2024 88 Phase3 1/1/2024 3/1/2024 45 Phase4 1/1/2024 3/1/2024 45 Phase5 1/1/2024 12/31/2024 261 Phase6 1/1/2024 4/1/2024 65 Phase7 1/1/2024 4/30/2024 86

HARP2 Multiplier - DPM (yearly)

HARP2 weekly Hours: 168
Project weekly hour: 40
1 year exposure Multiplier: 4.2

Off-road Equipment Emissions

	_					OII-road E	quipment Ei	1112210112													
				2								10						1	.8		Gal per
Phase	ounds per da	0	0	0	0	0.0	0.0	0	ons per yea	0	0	0	0	0.0	0.0	0	ric tons per	0	0	0	year
C	ROG	NOX	CO	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	CO	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH4	N2O	CO2e	Gal
Phase1	3.9	103.6	133.5	3.6	3.2	0.0	0.0	0.2	0.0	1.1	1.4	0.0	0.0	0.0	0.0	0.0	218.1	0.0	0.0	218.9	21363
Phase2	4.3	111.2	135.4	4.5	4.0	0.0	0.0	0.2	0.2	4.9	6.0	0.2	0.2	0.0	0.0	0.0	999.7	0.0	0.0	1003.1	97910
Phase3	3.3	85.2	99.2	3.3	3.0	0.0	0.0	0.2	0.1	1.9	2.2	0.1	0.1	0.0	0.0	0.0	390.3	0.0	0.0	391.7	38230
Phase4	1.1	28.0	37.2	1.2	1.1	0.0	0.0	0.1	0.0	0.6	0.8	0.0	0.0	0.0	0.0	0.0	125.7	0.0	0.0	126.1	12309
Phase5	4.5	134.0	189.2	3.4	3.1	0.0	0.0	0.3	0.6	17.5	24.7	0.4	0.4	0.0	0.0	0.0	3258.4	0.1	0.0	3269.6	319140
Phase6	1.5	41.3	57.9	1.8	1.6	0.0	0.0	0.1	0.0	1.3	1.9	0.1	0.1	0.0	0.0	0.0	259.7	0.0	0.0	260.6	25439
Phase7	1.7	46.7	60.8	1.6	1.4	0.0	0.0	0.1	0.1	2.0	2.6	0.1	0.1	0.0	0.0	0.0	401.8	0.0	0.0	403.2	39353

Total Offroad PM10 Exhaust (DPM Surrogate)

Tons/yr	0.9
Lbs/yr	1804.98116
A (II / I)	6.045627
Avg (lbs/day)	6.915637
AVG (lbs/hr)	0.86445458

Total Offroad PM2.5 Exhaust

Tons/yr	0.8
Lbs/yr	1634.919
Avg	
(lbs/day)	6.264057
AVG (lbs/hı	0.783007

DPM from Truck trips

Codo	Vehicles/	Single Trins/day	Speed (mph)	Miles/de	y Vehicle	Fuel	Consot			Po	ounds per day								Tons p	er year			
Code	day	Single Trips/day	Speed (mph)	willes/ua	у чепісіе Туре	ruei	Concat	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D	SO2
Phase5	302	604	10	604	nsite Employ LDA-LDTOr	Gas	LDA-LDTOn:	3.4	0.4	5.6	0.0	0.0	117.9	11.8	0.0	0.4	0.1	0.7	0.0	0.0	15.4	1.5	0.0

Code	Vehicles/	Single Trips/day	Hrs/Veh/Day	Speed	Miles/day	Vehicle Ve	ehicle Fu	el Lookup			Pour	nds per day								Tons p	er year			
Code	day	Single Trips/day	nis/veii/Day	(mph)	willes/uay	Veriicie T	ype ru	ei Lookup	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D	SO2
Water																								
Trucks																								
Phase1	0	0	2	5	0	Onsite Wate T60	nsite Die	sel T6Onsite5I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase2	0	0	2	5	0	Onsite Wate T60	nsite Die	sel T6Onsite5I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase3	0	0	2	5	0	Onsite Wate T60	nsite Die	sel T6Onsite5I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase4	0	0	2	5	0	Onsite Wate T60	nsite Die	sel T6Onsite5I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase5	12	12	2	5	120	Onsite Wate T60	nsite Die	sel T6Onsite5I	0.0	1.4	0.4	0.0	0.0	23.4	6.7	0.0	0.0	0.2	0.0	0.0	0.0	3.1	0.9	0.0
Phase6	0	0	2	5	0	Onsite Wate T60	nsite Die	sel T6Onsite5I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase7	0	0	2	5	0	Onsite Wate T60	nsite Die	sel T6Onsite5I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vendor Tr	ucks																							
Phase5	155	310	-	10	78	Onsite Venc T7O	nsite Die	sel T7Onsite10	1.3	18.5	18.5	0.0	0.0	15.1	1.5	0.0	0.2	2.4	2.4	0.0	0.0	2.0	0.2	0.0

Total On-site PM10
Exhaust (DPM) from
Truck Trips

 Truck Trips

 Tons/yr
 0.009

 Lbs/yr
 18.57749

 Lbs/hr
 0.008897

Total On-site PM2.5

Exhaust from Truck Trips	
Tons/yr	0.00
Lbs/yr	17.2629
Lbs/hr	0.00826

HRA -DPM Calc:

AERMOD Source Input PM10 Exhaust

Total lbs/hr (On-site) 0.87335184 total lbs/year (on-site) 1823.55865

AERMOD Source Input PM2.5Exhaust

Total lbs/hr (On-site) 0.791275 total lbs/year (on-site) 1,652.182

Air Dispersion Modeling - Emission Inventory

AERMOD - PM25 Dust Inventory

Vehicle Dust Calcs

Code	Vehicles/ day	Single	Hrs/Veh/Day	Speed	Miles/day	Vehicle	Vehicle	Fuel	Lookup				Pounds p	er day							Tons p	er year				
Code	venicles/ day	Trips/day	HIS/ Ven/ Day	(mph)	willes/ day	venicie	Туре	ruei	Lookup	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	со	PM10	PM2.5	PM10 D	PM2.5 D	SO2	
Water Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0	0	0	0	0	0	0.0	0.0	0	
Phase1	0	0	2	5	0	Onsite Wate	T6Onsite	Diesel	T6Onsite5Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Phase2	0	0	2	5	0	Onsite Wate	T6Onsite	Diesel	T6Onsite5Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Phase3	0	0	2	5	0	Onsite Wate	T6Onsite	Diesel	T6Onsite5Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Phase4	0	0	2	5	0	Onsite Wate	T6Onsite	Diesel	T6Onsite5Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Phase5	12	12	2	5	120	Onsite Wate	T6Onsite	Diesel	T6Onsite5Industrial	0.0	1.4	0.4	0.0	0.0	23.4	6.7	0.0	0.0	0.2	0.0	0.0	0.0	3.1	0.9	0.0	
Phase6	0	0	2	5	0	Onsite Wate	T6Onsite	Diesel	T6Onsite5Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Phase7	0	0	2	5	0	Onsite Wate	T6Onsite	Diesel	T6Onsite5Industrial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Vendor Trucks	0	0	0	0	0	0) ()		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1
Phase5	155	310	-	10	78	Onsite Vend	d T7Onsite	Diesel	T7Onsite10	1.3	18.5	18.5	0.0	0.0	15.1	1.5	0.0	0.2	2.4	2.4	0.0	0.0	2.0	0.2	0.0	
																							·			
Employee trips									ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D	SO2	CO2	CH
Phase5	302	604	10	604	Onsite Employee	e LDA-LDTOns	s Gas	A-LDTOnsit	te 3.4	0.4	5.6	0.0	0.0	117.9	11.8	0.0	0.4	0.1	0.7	0.0	0.0	15.4	1.5	0.0	46.6	0.0

On-site Mobile Trips Dust Calculation (Inputs)

Total Tons/yr Total lbs/yr Lbs/hr 2.6 5234.159513 2.506781376

Other On-Site Dust Calcs

Grade-Pave Demo Energy

				Tons pe	er year				
				202	24				
ROG	NOX	СО	PM10 Ex	PM10 D	PM10 T	PM2.5 Ex	PM2.5 D	PM2.5 T	sox
0.00	0.00	0.00	0.00	1.04	1.04	0.00	0.51	0.51	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
						total:	0.51		

Totals lbs/yr totals lbs/hr

1025.236 0.491013

AERMOD Construction On-site Dust Emission Inventory

Totals Lbs/yr Total lbs/hr 6259.39512 2.997794598 Air Dispersion Modeling - Emission Inventory

AERMOD - PM10 Dust Inventory

Codo	Vahialas / day	Cinala Trina/day	Live/Vols/Dov	Speed	N/ilos/dov	Vehiele	Vehicle	Fuel	Lookun				Pounds p	er day							Tons p	er year			
Code	Vehicles/ day	Single Trips/day	Hrs/Veh/Day	(mph)	Miles/day	Vehicle	Туре	Fuel	Lookup	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D	SO2	ROG	NOX	СО	PM10	PM2.5	PM10 D	PM2.5 D	SO2
Water Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0	0	0	0	0	0	0.0	0.0	0
Phase1	0	0	2	5	0	Onsite Wate	T6Onsite	Diesel	T6Onsite5Ir	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase2	0	0	2	5	0	Onsite Wate	T6Onsite	Diesel	T6Onsite5In	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase3	0	0	2	5	0	Onsite Wate	T6Onsite	Diesel	T6Onsite5In	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase4	0	0	2	5	0	Onsite Wate	T6Onsite	Diesel	T6Onsite5In	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase5	12	12	2	5	120	Onsite Wate	T6Onsite	Diesel	T6Onsite5In	0.0	1.4	0.4	0.0	0.0	23.4	6.7	0.0	0.0	0.2	0.0	0.0	0.0	3.1	0.9	0.0
Phase6	0	0	2	5	0	Onsite Wate	T6Onsite	Diesel	T6Onsite5In	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase7	0	0	2	5	0	Onsite Wate	T6Onsite	Diesel	T6Onsite5Ir	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vendor Trucks																									
Phase5	155	310	-	10	78	Onsite Vend	T7Onsite	Diesel	T7Onsite10	1.3	18.5	18.5	0.0	0.0	15.1	1.5	0.0	0.2	2.4	2.4	0.0	0.0	2.0	0.2	0.0

On-site Mobile Trips Dust Calculation (Inputs)

 Total Tons/yr
 5.0

 Total lbs/yr
 10067.60267

 Lbs/hr
 4.82164879

Other On-Site Dust Calcs

				Toı	ns per year					
					2024					
	ROG	NOX	СО	PM10 Ex	PM10 D	PM10 T	PM2.5 Ex	PM2.5 D	PM2.5 T	SOX
Grade-Pave	0.00	0.00	0.00	0.00	1.04	1.04	0.00	0.51	0.51	0.00
Demo	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			To	otal:	1.04					

Totals lbs/yr totals lbs/hr

AERMOD Construction On-site Dust Emission Inventory

2087.046

Totals Lbs/yr 12154.64866
Total lbs/hr 5.821191885

HARP 2 - Mobile Trips

Onroad Emission Factors- Unmitigated and Uncontrolled Fugitive Dust

Source: EMFAC2021. Offsite emission factors for aggregate speeds. Onsite for speeds shown.

					Running (RUNEX, PMTW, PMBW) grams per mile										
Year	Air Basin	VehType	Speed	Lookup	ROG	NOx	со	PM10 Ex	PM10 D	PM2.5 Ex	PM2.5 D	SO2	CO2	CH4	N2O
2023	MDAB	T6	Offsite	2023T6Offsite	0.01	0.89	0.05	0.01	0.22	0.01	0.04	0.01	1058	0.00	0.17
2024	MDAB	Т6	Offsite	2024T6Offsite	0.01	0.91	0.05	0.01	0.22	0.01	0.04	0.01	1055	0.00	0.17
2023	MDAB	Т7	Offsite	2023T7Offsite	0.02	1.39	0.07	0.02	0.27	0.02	0.06	0.02	1611	0.00	0.25
2024	MDAB	T7	Offsite	2024T7Offsite	0.02	1.37	0.07	0.02	0.27	0.02	0.06	0.02	1608	0.00	0.25

HARP 2 Emissions input

		100		D D A 4	(DR 44 O)	
4	ιEΚΙ	עטוע	Inputs	- טיואט	(PM10)	

								HARP 2 Input		HARP 2 Input
Roadway Segment	Length (M)	Le	ngth (miles)	EMFAC (g/mi)	Grams	Max Trips per day	Total Grams per day	Lbs/hr	G/sec	Lbs/yr
ONRD EX		7806.8	4.850920624	0.0	02 0.098915814	214	21.16798429	0.005833458	0.000734999	1.522532

AERMOD Inputs - PM10 D

									I	HARP 2 Input
Roadway Segment	Length (M)	Length	n (miles) E	EMFAC (g/mi)	Grams	Max trips per day	Total Grams per day	Lbs/hr G	i/sec I	Lbs/yr
ONRD DST		7806.8	1.850920624	0.27	1.331412099	214	284.9221891	0.078518648	0.009893132	20.49337

AERMOD Inputs - PM2.5 D

										HARP 2 Input
Roadway Segment	Length (M)	Le	ngth (miles)	EMFAC (g/mi)	Grams	Total Trips per day	Total Grams per day	Lbs/hr	G/sec	Lbs/yr
ONRD DST		7806.8	4.850920624	0.06	0.288599436	214	61.76027926	0.017019853	0.002144454	4.442182

AERMOD Inputs - PM2.5 Exhaust

										HARP 2 Input
Roadway Segment	Length (M)	Length (m	iles) EMFAC (g/m	ni) (Grams	Total Trips per day	Total Grams per day	Lbs/hr G	/sec	Lbs/yr
ONRD EX		7806.8 4.85	0920624	0.02	0.09463676	214	20.25226666	0.005581105	0.000703204	1.456668

*HARP - HRACalc v22118 4/7/2023 9:32:13 AM - Cancer Risk - Input File: C:\Users\Desktop\Bullhead Solar\BullheadSolar HRAInput.hra RISK SUM SCENARIO DETAILS INH RISK SOIL RISK DERMAL RMMILK RISWATER RISH RISK CROP RISK BEEF RISK DAIRY RISHPIG RISK CHICKEN FEGG RISK 1ST DRIVE 2ND DRIVEPASTURE (FISH CONCWATER CONC POLABBRE'CONC 71 382015.2 3863333 9901 DieselExhP 0.01897 6.23E-06 2YrCancer[* 6.23E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 67 380406.2 3863549 9901 DieselExhP 6.16E-06 2YrCancer[* 6.16E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.01874 3863936 0.01864 6.12E-06 2YrCancer[* 6.12E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 65 381224.4 9901 DieselExhP 0.01781 5.85E-06 2YrCancer[* 524 380381.7 3863548 5.85E-06 0.00E+00 0.0 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3863937 0.01765 5.80E-06 2YrCancer[* 5.80E-06 0.00E+00 477 381199.5 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3863332 0.01755 5.77E-06 2YrCancer[* 708 382038.7 9901 DieselExhP 5.77E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863309 707 382015.2 9901 DieselExhP 0.01738 5.71E-06 2YrCancer[* 5.71E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 73 382418.5 3863525 9901 DieselExhP 0.0171 5.62E-06 2YrCancer[* 5.62E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 5.56E-06 0.00E+00 0.00E+ 3863961 0.01693 476 381224.5 9901 DieselExhP 5.56E-06 2YrCancer[0.00E+00 0.00E+00 0.00E+00 523 380405.9 3863573 9901 DieselExhP 0.01686 5.54E-06 2YrCancer[5.54E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 478 381174.6 3863937 9901 DieselExhP 0.0168 5.52E-06 2YrCancer[* 5.52E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 525 380357.3 3863548 0.01676 5.51E-06 2YrCancer[* 5.51E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 709 382062.2 3863331 9901 DieselExhP 0.0167 5.49E-06 2YrCancer[* 5.49E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 78 382817.8 3863521 9901 DieselExhP 0.01639 5.38E-06 2YrCancer[* 5.38E-06 0.00E+00 9901 DieselExhP 74 382571.2 3863517 0.01637 5.38E-06 2YrCancer[* 5.38E-06 0.00E+00 5.37E-06 0.00E+00 706 382015.2 3863284 9901 DieselExhP 0.01634 5.37E-06 2YrCancer[* 526 380332.8 3863548 0.01633 5.36E-06 0.00E+00 0.00E+ 9901 DieselExhP 5.36F-06.2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 81 382027 3864328 9901 DieselExhP 0.0162 5.32E-06 2YrCancer[* 0.00E+00 0.0 479 381149.7 3863937 9901 DieselExhP 0.01617 5.31E-06 2YrCancer[* 5.31E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 3863524 0.01616 5.31E-06 2YrCancer[* 5.31E-06 0.00E+00 0.0 728 382440.3 9901 DieselExhP 475 381224.6 3863986 9901 DieselExhP 0.01595 5.24E-06 2YrCancer[5.24E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 727 382406.4 3863505 9901 DieselExhP 0.01581 5.19E-06 2YrCancer[* 5.19E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863547 527 380308.4 0.01578 5.18E-06 2YrCancer[* 5.18E-06 0.00E+00 0.0 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 943 382051.9 3864328 9901 DieselExhP 5.18E-06 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.01578 710 382085.7 3863330 9901 DieselExhP 0.01574 5.17E-06 2YrCancer[* 5.17E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 480 381124.7 3863937 9901 DieselExhP 0.0157 5.16E-06 2YrCancer[3 5.16E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.0157 5.16E-06 2YrCancer[* 5.16E-06 0.00E+00 0.0 733 382549.4 3863519 9901 DieselExhP 3863260 705 382015.2 9901 DieselExhP 0.01569 5.15E-06 0.00E+00 5.15E-06 2YrCancer[* 9901 DieselExhP 729 382462.1 3863523 0.01559 5.12E-06 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 522 380405.7 3863598 9901 DieselExhP 0.01555 5.11E-06 2YrCancer[* 5.11E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.01534 5.04E-06 2YrCancer[* 528 380284 3863547 9901 DieselExhP 5.04E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 481 381099.8 3863938 9901 DieselExhP 0.01533 5.04E-06 2YrCancer[5.04E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 474 381224.6 3864010 9901 DieselExhP 0.0153 5.03E-06 2YrCancer[* 5.03E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863520 732 382527.6 9901 DieselExhP 0.01529 5.02E-06 2YrCancer[* 5.02E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 752 382842.7 3863521 9901 DieselExhP 0.01529 5.02E-06 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 730 382483.9 3863522 9901 DieselExhP 0.01528 5.02E-06 2YrCancer[* 5.02E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 942 382076.8 3864327 5.02E-06 0.00E+00 0.0 9901 DieselExhP 0.01527 5.02E-06 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 3863235 4.99E-06 0.00E+00 704 382015.2 9901 DieselExhP 0.01519 4.99E-06 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 731 382505.7 3863521 9901 DieselExhP 4.99E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 711 382109.2 3863329 9901 DieselExhP 4.96E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 944 382027 3864352 9901 DieselExhP 0.01506 4.95E-06 2YrCancer[* 4.95E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 734 382560.4 3863497 9901 DieselExhP 0.01502 4.93E-06 2YrCancer[* 4.93E-06 0.00E+00 482 381074.9 3863938 9901 DieselExhP 0.01496 4.91E-06 2YrCancer[* 4.91E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 726 382394.2 3863485 9901 DieselExhP 0.01496 4.91E-06 2YrCancer[* 4.91E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3864327 941 382101.7 9901 DieselExhP 0.01494 4.91E-06 2YrCancer[* 4.91E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 529 380259.5 3863547 9901 DieselExhP 0.01482 4.87E-06 0.00E+00 0.0 4.87E-06 2YrCancer[473 381224.7 3864035 9901 DieselExhP 0.01481 4.87E-06 2YrCancer[* 4.87E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 703 382015.2 3863210 9901 DieselExhP 4.86E-06 0.00E+00 751 382818.6 3863500 9901 DieselExhP 0.01476 4.85F-06 2YrCancer[4.85E-06 0.00E+00 521 380405.4 3863623 4.84E-06 0.00E+00 0.0 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 530 380235.1 3863546 9901 DieselExhP 0.01472 4.84E-06 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 381050 3863938 9901 DieselExhP 0.0147 4.83E-06 2YrCancer[* 4.83E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3864327 4.83E-06 0.00E+00 940 382126.6 9901 DieselExhP 0.0147 4.83E-06 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 712 382132.7 3863329 9901 DieselExhP 0.01459 4.79E-06 2YrCancer[* 4.79E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 939 382151.5 3864326 9901 DieselExhP 0.01449 4.76E-06 2YrCancer[* 4.76E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863186 702 382015.2 9901 DieselExhP 0.01447 4.75E-06 2YrCancer[4.75E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00

4.75E-06 0.00E+00 0.0

753 382867.6

3863520

9901 DieselExhP

0.01446 4.75E-06 2YrCancer[*

0.00E+00 0.00E+00 0.00E+00

*HARP - HRACalc v22118 4/7/2023 9:32:13 AM - Cancer Risk - Input File: C:\Users\Desktop\Bullhead Solar\BullheadSolar HRAInput.hra RISK SUM SCENARIO DETAILS INH RISK SOIL RISK DERMAL RMMILK RISWATER RISH RISK CROP RISK BEEF RISK DAIRY RISI PIG RISK CHICKEN FEGG RISK 1ST DRIVE 2ND DRIVI PASTURE (FISH CONCWATER CONC POLABBRE' CONC 484 381025.1 3863938 9901 DieselExhP 0.01445 4.75E-06 2YrCancer[* 4.75E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 382027 3864377 9901 DieselExhP 4.74E-06 2YrCancer[* 4.74E-06 0.00E+00 0.0 945 0.01444 531 380210.6 3863546 9901 DieselExhP 0.01442 4.74E-06 2YrCancer[* 4.74E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.01441 4.73E-06 2YrCancer[* 3864059 4.73E-06 0.00E+00 0.0 472 381224.8 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 0.01437 4.72E-06 2YrCancer[* 4.72E-06 0.00E+00 0.0 725 382382.1 3863464 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3864326 938 382176.4 9901 DieselExhP 0.01431 4.70E-06 2YrCancer[* 4.70E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863938 485 381000.2 9901 DieselExhP 0.0142 4.66E-06 2YrCancer[* 4.66E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 532 380186.2 3863546 9901 DieselExhP 0.01419 4.66E-06 2YrCancer[* 4.66E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 4.66E-06 0.00E+00 3863161 701 382015.2 9901 DieselExhP 0.01418 4.66E-06 2YrCancer[' 0.00E+00 0.00E+00 0.00E+00 937 382201.3 3864326 9901 DieselExhP 0.01416 4.65E-06 2YrCancer[3 4.65E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 713 382156.2 3863328 9901 DieselExhP 4.64E-06 0.00E+00 471 381224.9 3864084 4.64E-06 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 520 380405.2 3863648 9901 DieselExhP 0.01411 4.64E-06 2YrCancer[* 4.64E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 382027 3864401 9901 DieselExhP 0.01409 4.63E-06 2YrCancer[* 4.63E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 946 486 380975.3 3863939 0.01408 4.63E-06 0.00E+00 9901 DieselExhP 4.63E-06 2YrCancer[0.00E+00 0.00E+00 0.00E+00 4.62E-06 0.00E+00 0.0 735 382549.7 3863476 9901 DieselExhP 0.01407 4.62E-06 2YrCancer[3864326 0.01404 4.61E-06 0.00E+00 936 382226.2 9901 DieselExhP 4.61F-06 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 754 382892.5 3863520 9901 DieselExhP 0.01398 4.59E-06 2YrCancer[* 0.00E+00 0.0 935 382251.1 3864325 9901 DieselExhP 0.01393 4.58E-06 2YrCancer[* 4.58E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 3863939 0.01392 4.57E-06 2YrCancer[* 4.57E-06 0.00E+00 0.0 487 380950.4 9901 DieselExhP 700 382015.2 3863137 9901 DieselExhP 0.01392 4.57E-06 2YrCancer[4.57E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 724 382369.9 3863444 9901 DieselExhP 0.01391 4.57E-06 2YrCancer[* 4.57E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3864109 381225 0.01387 4.56E-06 2YrCancer[* 4.56E-06 0.00E+00 0.0 470 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 534 380137.3 3863545 9901 DieselExhP 0.01387 4.56E-06 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 947 382027 3864426 9901 DieselExhP 0.01384 4.55E-06 2YrCancer[* 4.55E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863545 0.01383 533 380161.8 9901 DieselExhP 4.54E-06 2YrCancer[4.54E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 4.54E-06 0.00E+00 0.0 382276 3864325 9901 DieselExhP 0.01383 4.54E-06 2YrCancer[* 3863939 9901 DieselExhP 488 380925.4 0.01376 4.52E-06 2YrCancer[* 4.52E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 933 382300.9 3864325 0.01374 4.51E-06 2YrCancer[* 0.00E+00 0.0 714 382179.7 3863327 9901 DieselExhP 0.0137 4.50E-06 2YrCancer[* 4.50E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 535 380112.9 3863544 9901 DieselExhP 0.01369 4.50E-06 2YrCancer[4.50E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 381225 3864133 9901 DieselExhP 0.01368 4.49E-06 2YrCancer[4.49E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 699 382015.2 3863112 9901 DieselExhP 0.01368 4.49E-06 2YrCancer[* 4.49E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863520 755 382917.3 0.01368 4.49E-06 2YrCancer[* 4.49E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 382027 3864451 9901 DieselExhP 0.01366 4.49E-06 2YrCancer[* 0.00E+00 0.0 948 932 382325.8 3864324 9901 DieselExhP 0.01364 4.48E-06 0.00E+00 0.0 4.48E-06 2YrCancer[0.00E+00 0.00E+00 0.00E+00 3863939 0.01363 4.48E-06 0.00E+00 489 380900.5 9901 DieselExhP 4.48E-06 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 519 380404.9 3863672 9901 DieselExhP 0.01363 4.48E-06 2YrCancer[* 4.48E-06 0.00E+00 0.0 931 382350.7 3864324 0.01357 9901 DieselExhP 4.46E-06 2YrCancer[* 4.46E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863544 536 380088.5 9901 DieselExhP 0.01354 4.45E-06 2YrCancer[* 4.45E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 949 382027 3864475 9901 DieselExhP 0.01353 4.44E-06 2YrCancer[* 4.44E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 723 382357.8 3863423 9901 DieselExhP 0.01352 4.44E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 4.44E-06 2YrCancer[930 382375.6 3864324 9901 DieselExhP 0.01351 4.44E-06 2YrCancer[* 4.44E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 468 381225.1 3864158 9901 DieselExhP 0.0135 4.43E-06 2YrCancer[* 4.43E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863940 4.42E-06 2YrCancer[* 490 380875.6 9901 DieselExhP 0.01347 4.42E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 756 382942.2 3863519 9901 DieselExhP 0.01347 4.42E-06 0.00E+00 0.0 4.42E-06 2YrCancer[698 382015.2 3863088 9901 DieselExhP 0.01346 4.42E-06 2YrCancer[* 4.42E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 929 382400.5 3864324 9901 DieselExhP 4.42E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 382027 3864500 9901 DieselExhP 0.0134 4.40F-06 2YrCancer[4.40E-06 0.00E+00 928 382425.4 3864323 0.01339 4.40E-06 0.00E+00 0.0 9901 DieselExhP 4.40F-06 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 467 381225.2 3864182 9901 DieselExhP 0.01334 4.38E-06 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 491 380850.7 3863940 9901 DieselExhP 0.01334 4.38E-06 2YrCancer[* 4.38E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3864323 4.38E-06 0.00E+00 0.0 927 382450.3 9901 DieselExhP 0.01334 4.38E-06 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 750 382819.4 3863479 9901 DieselExhP 0.01333 4.38E-06 2YrCancer[* 4.38E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 757 382967.1 3863519 9901 DieselExhP 0.01333 4.38E-06 2YrCancer[* 4.38E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3864524 0.01333 951 382027 9901 DieselExhP 4.38E-06 2YrCancer[0.00E+00 926 382475.2 3864323 9901 DieselExhP 0.01329 4.37E-06 2YrCancer[* 4.37E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00

*HARP - HRACalc v22118 4/7/2023 9:32:13 AM - Cancer Risk - Input File: C:\Users\Desktop\Bullhead Solar\BullheadSolar HRAInput.hra RISK SUM SCENARIO DETAILS INH RISK SOIL RISK DERMAL RMMILK RISWATER RISH RISK CROP RISK BEEF RISK DAIRY RISHPIG RISK CHICKEN FEGG RISK 1ST DRIVE 2ND DRIVEPASTURE (FISH CONCWATER CONC POLABBRE' CONC 382027 3864549 9901 DieselExhP 0.01327 4.36E-06 2YrCancer[* 4.36E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 715 382203.2 3863326 9901 DieselExhP 0.01326 4.36E-06 2YrCancer[* 4.36E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 697 382015.2 3863063 0.01325 4.35E-06 2YrCancer[* 4.35E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 0.01324 4.35E-06 2YrCancer[* 3863543 4.35E-06 0.00E+00 0.0 538 380039.6 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3864322 0.01324 4.35E-06 2YrCancer[* 4.35E-06 0.00E+00 0.0 925 382500.1 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 518 380404.7 3863697 0.01323 9901 DieselExhP 4.35E-06 2YrCancer[* 4.35E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863518 0.01322 758 382992 9901 DieselExhP 4.34E-06 2YrCancer[* 4.34E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 961 382027 3864770 9901 DieselExhP 0.01322 4.34E-06 2YrCancer[* 4.34E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 4.34E-06 0.00E+00 0.0 380064 3863544 0.01321 4.34E-06 2YrCancer[* 537 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 953 382027 3864573 9901 DieselExhP 0.01321 4.34E-06 2YrCancer[4.34E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 466 381225.3 3864207 9901 DieselExhP 0.0132 4.34E-06 2YrCancer[* 4.34E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 492 380825.8 3863940 0.0132 4.34E-06 2YrCancer[* 4.34E-06 0.00E+00 0.0 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 736 382538.9 3863456 9901 DieselExhP 0.0132 4.34E-06 2YrCancer[* 4.34E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 959 382027 3864721 9901 DieselExhP 0.0132 4.34E-06 2YrCancer[* 4.34E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 962 382027 3864794 0.0132 4.34E-06 2YrCancer[* 4.34E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3864322 4.33E-06 0.00E+00 0.0 924 382525.1 9901 DieselExhP 0.01319 4.33E-06 2YrCancer[382027 3864598 4.33E-06 0.00E+00 954 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 955 382027 3864623 9901 DieselExhP 0.00E+00 0.0 958 382027 3864696 9901 DieselExhP 0.01317 4.33E-06 2YrCancer[* 4.33E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3864745 0.00E+00 0.00E+00 0.00E+00 960 382027 4.33E-06 0.00E+00 0.0 9901 DieselExhP 0.01317 4.33E-06 2YrCancer[964 382027 3864844 9901 DieselExhP 0.01317 4.33E-06 2YrCancer[4.33E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 956 382027 3864647 9901 DieselExhP 0.01316 4.32E-06 2YrCancer[* 4.32E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3864819 382027 0.01316 4.32E-06 2YrCancer[* 4.32E-06 0.00E+00 0.0 963 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 967 382027 3864917 9901 DieselExhP 0.01316 4.32E-06 2YrCancer[* 0.00E+00 0.0 965 382027 3864868 9901 DieselExhP 0.01315 4.32E-06 2YrCancer[* 4.32E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863542 541 379966.3 9901 DieselExhP 0.01314 4.32E-06 2YrCancer[4.32E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 4.32E-06 0.00E+00 0.0 759 383016.8 3863518 9901 DieselExhP 0.01314 4.32E-06 2YrCancer[* 3864322 9901 DieselExhP 923 382550 4.32E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 957 382027 3864672 0.00E+00 0.0 966 382027 3864893 9901 DieselExhP 0.01314 4.32E-06 2YrCancer[* 4.32E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 722 382345.7 3863403 9901 DieselExhP 4.31E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 382027 3864942 9901 DieselExhP 0.01312 4.31E-06 2YrCancer[4.31E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 539 380015.1 3863543 9901 DieselExhP 0.0131 4.30E-06 2YrCancer[* 4.30E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3864232 465 381225.4 9901 DieselExhP 0.01309 4.30E-06 2YrCancer[* 4.30E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 922 382574.9 3864322 9901 DieselExhP 0.01309 4.30E-06 2YrCancer[* 0.00E+00 696 382015.2 3863038 9901 DieselExhP 0.01305 4.29E-06 0.00E+00 0.0 4.29E-06 2YrCancer[0.00E+00 0.00E+00 0.00E+00 0.01305 4.29E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 760 383041.7 3863518 9901 DieselExhP 4.29E-06 2YrCancer[969 382027 3864966 9901 DieselExhP 0.01305 4.29E-06 2YrCancer[* 4.29E-06 0.00E+00 0.0 3863940 493 380800.9 9901 DieselExhP 4.28E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 921 382599.8 3864321 9901 DieselExhP 0.01303 4.28E-06 2YrCancer[* 4.28E-06 0.00E+00 540 379990.7 3863543 9901 DieselExhP 0.01301 4.27E-06 2YrCancer[* 4.27E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863517 9901 DieselExhP 0.01298 4.26E-06 2YrCancer[* 4.26E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 761 383066.6 920 382624.7 3864321 9901 DieselExhP 0.01298 4.26E-06 2YrCancer[4.26E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 464 381225.4 3864256 9901 DieselExhP 0.01297 4.26E-06 2YrCancer[* 4.26E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863941 4.26E-06 2YrCancer[* 380776 9901 DieselExhP 0.01297 4.26E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 494 919 382649.6 3864321 9901 DieselExhP 0.01294 4.25E-06 0.00E+00 0.0 4.25E-06 2YrCancer[382027 3864991 9901 DieselExhP 0.01294 4.25E-06 2YrCancer[* 4.25E-06 0.00E+00 0.0 970 0.00E+00 0.00E+00 0.00E+00 762 383091.5 3863517 0.01292 9901 DieselExhP 4.24E-06 2YrCancer[* 4.24E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 918 382674.5 3864320 9901 DieselExhP 0.01291 4.24F-06 2YrCancer[3 4.24E-06 0.00E+00 0.0 3863516 0.01288 4.23E-06 2YrCancer[* 4.23E-06 0.00E+00 0.0 763 383116.3 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 917 382699.4 3864320 9901 DieselExhP 0.01288 4.23E-06 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 517 380404.5 3863722 9901 DieselExhP 0.01287 4.23E-06 2YrCancer[* 4.23E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3864320 4.22E-06 0.00E+00 0.0 916 382724.3 9901 DieselExhP 0.01286 4.22E-06 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 463 381225.5 3864281 9901 DieselExhP 0.01285 4.22E-06 2YrCancer[* 4.22E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 495 380751 3863941 9901 DieselExhP 0.01284 4.22E-06 2YrCancer[* 4.22E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863014 0.01284 695 382015.2 9901 DieselExhP 4.22E-06 2YrCancer[4.22E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 382027 3865015 9901 DieselExhP 0.01284 4.22E-06 2YrCancer[* 4.22E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00

*HARP - HRACalc v22118 4/7/2023 9:32:13 AM - Cancer Risk - Input File: C:\Users\Desktop\Bullhead Solar\BullheadSolar HRAInput.hra RISK SUM SCENARIO DETAILS INH RISK SOIL RISK DERMAL RMMILK RISWATER RISH RISK CROP RISK BEEF RISK DAIRY RISHPIG RISK CHICKEN FEGG RISK 1ST DRIVE 2ND DRIVEPASTURE (FISH CONCWATER CONC POLABBRE'CONC 915 382749.2 3864320 9901 DieselExhP 4.21E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 542 379941.8 3863542 9901 DieselExhP 4.20E-06 2YrCancer[* 4.20E-06 0.00E+00 0.0 0.0128 764 383141.2 3863516 9901 DieselExhP 0.0128 4.20E-06 2YrCancer[* 4.20E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.01279 4.20E-06 2YrCancer[3864305 4.20E-06 0.00E+00 0.0 462 381225.6 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3863325 0.01278 4.20E-06 2YrCancer[* 4.20E-06 0.00E+00 0.0 716 382226.7 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 914 382774.1 3864319 9901 DieselExhP 4.20E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3864319 913 382799 9901 DieselExhP 4.19E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 765 383166.1 3863515 9901 DieselExhP 0.01272 4.18E-06 2YrCancer[* 4.18E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 4.18E-06 0.00E+00 0.0 3864330 0.01271 4.18E-06 2YrCancer[* 461 381225.7 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 912 382823.9 3864319 9901 DieselExhP 0.0127 4.17E-06 2YrCancer[3 4.17E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 460 381225.8 3864355 9901 DieselExhP 0.01269 4.17E-06 2YrCancer[* 4.17E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 496 380726.1 3863941 0.01268 4.17E-06 2YrCancer[* 4.17E-06 0.00E+00 0.0 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 721 382333.5 3863383 9901 DieselExhP 0.01268 4.17E-06 2YrCancer[* 4.17E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 383191 3863515 9901 DieselExhP 0.01267 4.16E-06 2YrCancer[* 4.16E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 766 9901 DieselExhP 911 382848.8 3864318 0.01266 4.16E-06 0.00E+00 4.16E-06 2YrCancer[0.00E+00 0.00E+00 0.00E+00 3864318 4.16E-06 0.00E+00 0.0 910 382873.7 9901 DieselExhP 0.01265 4.16E-06 2YrCancer[* 459 381225.8 3864379 0.01263 4.15E-06 2YrCancer[* 4.15E-06 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 543 379917.4 3863542 9901 DieselExhP 0.01263 4.15E-06 2YrCancer[* 0.00E+00 0.0 694 382015.2 3862989 9901 DieselExhP 0.01262 4.15E-06 2YrCancer[* 4.15E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 3864318 0.01262 4.15E-06 2YrCancer[* 4.15E-06 0.00E+00 0.0 909 382898.6 9901 DieselExhP 767 383215.8 3863515 9901 DieselExhP 0.01261 4.14E-06 2YrCancer[4.14E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 458 381225.9 3864404 9901 DieselExhP 0.0126 4.14E-06 2YrCancer[* 4.14E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3864318 908 382923.5 0.0126 4.14E-06 2YrCancer[* 4.14E-06 0.00E+00 0.0 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 382027 3865040 9901 DieselExhP 0.01258 4.13E-06 2YrCancer[* 0.00E+00 0.0 972 457 381226 3864428 9901 DieselExhP 0.01257 4.13E-06 2YrCancer[* 4.13E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 907 382948.4 3864317 9901 DieselExhP 0.01257 4.13E-06 2YrCancer[4.13E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 4.13E-06 0.00E+00 0.0 497 380701.2 3863941 9901 DieselExhP 0.01256 4.13E-06 2YrCancer[3 3863746 9901 DieselExhP 516 380404.2 0.01255 4.12E-06 2YrCancer[* 4.12E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 906 382973.3 3864317 0.01255 4.12E-06 2YrCancer[* 0.00E+00 0.0 768 383240.7 3863514 9901 DieselExhP 0.01254 4.12E-06 2YrCancer[* 4.12E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.01253 4.12E-06 2YrCancer[* 545 379868.5 3863541 9901 DieselExhP 4.12E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 905 382998.2 3864317 9901 DieselExhP 0.01252 4.11E-06 2YrCancer[4.11E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 456 381226.1 3864453 9901 DieselExhP 0.01251 4.11E-06 2YrCancer[* 4.11E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863541 544 379892.9 0.01249 4.10E-06 2YrCancer[* 4.10E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 904 383023.1 3864317 9901 DieselExhP 0.01249 4.10E-06 2YrCancer[* 0.00E+00 0.0 455 381226.2 3864478 9901 DieselExhP 0.01248 4.10E-06 2YrCancer[* 4.10E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863514 4.10E-06 0.00E+00 0.0 769 383265.6 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3864502 454 381226.2 9901 DieselExhP 0.01245 4.09E-06 2YrCancer[* 4.09E-06 0.00E+00 0.0 3864316 383048 9901 DieselExhP 4.09E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 903 3864527 453 381226.3 9901 DieselExhP 0.01243 4.08E-06 2YrCancer[* 4.08E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 498 380676.3 3863942 9901 DieselExhP 0.01243 4.08E-06 2YrCancer[* 4.08E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 770 383290.5 3863513 9901 DieselExhP 0.01242 4.08E-06 2YrCancer[* 4.08E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 902 383072.9 3864316 9901 DieselExhP 0.01242 4.08E-06 2YrCancer[4.08E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 693 382015.2 3862965 9901 DieselExhP 0.0124 4.07E-06 2YrCancer[* 4.07E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3864316 0.01238 4.07E-06 2YrCancer[* 901 383097.8 9901 DieselExhP 4.07E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 771 383315.3 3863513 9901 DieselExhP 0.01237 4.06E-06 2YrCancer[* 4.06E-06 0.00E+00 0.0 452 381226.4 3864552 9901 DieselExhP 0.01236 4.06E-06 2YrCancer[* 4.06E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 900 383122.7 3864315 0.01234 9901 DieselExhP 4.05E-06 2YrCancer[* 4.05E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 451 381226.5 3864576 9901 DieselExhP 0.01233 4.05E-06 2YrCancer[4.05E-06 0.00E+00 3863512 0.01232 4.05E-06 2YrCancer[* 4.05E-06 0.00E+00 0.0 772 383340.2 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 899 383147.6 3864315 9901 DieselExhP 0.01231 4.04E-06 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 449 381226.6 3864625 9901 DieselExhP 0.0123 4.04E-06 2YrCancer[* 4.04E-06 0.00E+00 3863942 4.04E-06 0.00E+00 499 380651.4 9901 DieselExhP 0.0123 4.04E-06 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 448 381226.7 3864650 9901 DieselExhP 0.01228 4.03E-06 2YrCancer[* 4.03E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 773 383365.1 3863512 9901 DieselExhP 0.01228 4.03E-06 2YrCancer[* 4.03E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3864675 447 381226.8 9901 DieselExhP 0.01227 4.03E-06 2YrCancer[4.03E-06 0.00E+00 450 381226.6 3864601 9901 DieselExhP 0.01227 4.03E-06 2YrCancer[* 4.03E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00

*HARP - HRACalc v22118 4/7/2023 9:32:13 AM - Cancer Risk - Input File: C:\Users\Desktop\Bullhead Solar\BullheadSolar HRAInput.hra RISK SUM SCENARIO DETAILS INH RISK SOIL RISK DERMAL RMMILK RISWATER RISH RISK CROP RISK BEEF RISK DAIRY RISHPIG RISK CHICKEN FEGG RISK 1ST DRIVE 2ND DRIVEPASTURE (FISH CONCWATER CONC POLABBRE' CONC 898 383172.5 3864315 9901 DieselExhP 0.01227 4.03E-06 2YrCancer[* 4.03E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 446 381226.9 3864699 9901 DieselExhP 4.02E-06 2YrCancer[* 4.02E-06 0.00E+00 0.0 0.01224 774 383390 3863512 9901 DieselExhP 4.02E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.01224 4.02E-06 2YrCancer[* 3864315 4.02E-06 0.00E+00 0.0 897 383197.4 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3864724 0.01223 4.02E-06 2YrCancer[* 4.02E-06 0.00E+00 0.0 445 381227 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 380404 3863771 515 9901 DieselExhP 4.02E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3865065 0.01222 973 382027 9901 DieselExhP 4.01E-06 2YrCancer[* 4.01E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 775 383414.8 3863511 9901 DieselExhP 0.01221 4.01E-06 2YrCancer[* 4.01E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.0122 4.01E-06 2YrCancer[* 4.01E-06 0.00E+00 444 3864748 381227 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 896 383222.3 3864314 9901 DieselExhP 0.0122 4.01E-06 2YrCancer[3 4.01E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 443 381227.1 3864773 9901 DieselExhP 0.01219 4.00E-06 2YrCancer[* 4.00E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 75 382528.1 3863435 4.00E-06 0.00E+00 0.0 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 692 382015.2 3862940 9901 DieselExhP 0.01218 4.00E-06 2YrCancer[* 4.00E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 546 379844.1 3863541 9901 DieselExhP 4.00E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 776 383439.7 3863511 0.01217 4.00E-06 2YrCancer[4.00E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3.99E-06 0.00E+00 717 382250.1 3863324 9901 DieselExhP 895 383247.2 3864314 3.99E-06 0.00E+00 0.00E+ 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 500 380626.5 3863942 9901 DieselExhP 0.00E+00 0.0 720 382321.4 3863362 9901 DieselExhP 3.98E-06 0.00E+00 3863510 3.98E-06 0.00E+00 777 383464.6 9901 DieselExhP 894 383272.1 3864314 9901 DieselExhP 3.98E-06 0.00E+00 442 381227.2 3864798 9901 DieselExhP 0.01209 3.97E-06 2YrCancer[* 3.97E-06 0.00E+00 3863458 749 382820.2 0.01209 3.97E-06 2YrCancer[* 3.97E-06 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 778 383489.5 3863510 9901 DieselExhP 0.01209 3.97E-06 2YrCancer[* 0.00E+00 0.0 383297 3864313 9901 DieselExhP 0.01209 3.97E-06 2YrCancer[* 3.97E-06 0.00E+00 893 3864313 892 383321.9 9901 DieselExhP 0.01206 3.96E-06 2YrCancer[3.96E-06 0.00E+00 3.96E-06 0.00E+00 779 383514.4 3863510 9901 DieselExhP 3864313 891 383346.8 9901 DieselExhP 0.01204 3.96E-06 2YrCancer[* 3.96E-06 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 548 379795.2 3863540 0.01202 3.95E-06 2YrCancer[* 0.00E+000.00E+00 0.00E+00 0.0 407 381777.4 3865139 9901 DieselExhP 0.01201 3.95E-06 2YrCancer[* 3.95E-06 0.00E+00 0.01201 3.95E-06 2YrCancer[* 408 381752.5 3865140 9901 DieselExhP 3.95E-06 0.00E+00 547 379819.6 3863540 9901 DieselExhP 0.01201 3.95E-06 2YrCancer[3.95E-06 0.00E+00 890 383371.8 3864313 9901 DieselExhP 0.01201 3.95E-06 2YrCancer[* 3.95E-06 0.00E+00 3865139 406 381802.4 9901 DieselExhP 0.012 3.94E-06 2YrCancer[* 3.94E-06 0.00E+00 780 383539.2 3863509 9901 DieselExhP 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 889 383396.7 3864312 9901 DieselExhP 0.01199 3.94E-06 2YrCancer[* 3.94E-06 0.00E+00 3865140 3.94E-06 0.00E+00 0.0 409 381727.5 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 888 383421.6 3864312 9901 DieselExhP 0.01197 3.93E-06 2YrCancer[* 3.93E-06 0.00E+00 3865139 0.01196 3.93E-06 2YrCancer[* 405 381827.3 9901 DieselExhP 3.93E-06 0.00E+00 3864822 441 381227.3 9901 DieselExhP 3.93E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 887 383446.5 3864312 9901 DieselExhP 0.01195 3.93E-06 2YrCancer[* 3.93E-06 0.00E+00 3865140 9901 DieselExhP 0.01194 3.92E-06 2YrCancer[* 3.92E-06 0.00E+00 410 381702.5 781 383564.1 3863509 9901 DieselExhP 0.01194 3.92E-06 2YrCancer[3.92E-06 0.00E+00 501 380601.6 3863942 9901 DieselExhP 0.01193 3.92E-06 2YrCancer[* 3.92E-06 0.00E+00 3862915 691 382015.2 9901 DieselExhP 0.01193 3.92E-06 2YrCancer[* 3.92E-06 0.00E+00 886 383471.4 3864311 9901 DieselExhP 0.01192 3.92E-06 0.00E+00 3.92E-06 2YrCancer[0.00E+00 0.00E+00 0.00E+00 383589 3863508 9901 DieselExhP 0.0119 3.91E-06 2YrCancer[* 3.91E-06 0.00E+00 0.0 782 0.00E+00 0.00E+00 0.00E+00 0.01189 3.91E-06 2YrCancer[* 3865139 404 381852.3 9901 DieselExhP 3.91E-06 0.00E+00 411 381677.6 3865140 9901 DieselExhP 0.01189 3.91E-06 2YrCancer[* 3.91E-06 0.00E+00 514 380403.7 3863796 3.91E-06 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 740 382628.6 3863416 9901 DieselExhP 0.01189 3.91E-06 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 885 383496.3 3864311 9901 DieselExhP 0.01189 3.91E-06 2YrCancer[* 3.91E-06 0.00E+00 3862725 3.90E-06 0.00E+00 635 9901 DieselExhP 0.01188 3.90E-06 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 380791 634 380766.1 3862725 9901 DieselExhP 0.01187 3.90E-06 2YrCancer[3.90E-06 0.00E+00 636 380816 3862725 9901 DieselExhP 0.01187 3.90E-06 2YrCancer[* 3.90E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3864311 884 383521.2 9901 DieselExhP 0.01187 3.90E-06 2YrCancer[3.90E-06 0.00E+000.00E+00 0.00E+00 631 380691.1 3862725 9901 DieselExhP 0.01186 3.90E-06 2YrCancer[* 3.90E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00

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*HARP - HRACalc v22118 4/7/2023 9:32:13 AM - Cancer Risk - Input File: C:\Users\Desktop\Bullhead Solar\BullheadSolar HRAInput.hra RISK SUM SCENARIO DETAILS INH RISK SOIL RISK DERMAL RMMILK RISWATER RISH RISK CROP RISK BEEF RISK DAIRY RISI PIG RISK CHICKEN FEGG RISK 1ST DRIVE 2ND DRIVI PASTURE (FISH CONCWATER CONC POLABBRE' CONC 382027 3865089 3.83E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 656 381315.7 3862722 9901 DieselExhP 3.82E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 415 381577.7 3865140 9901 DieselExhP 3.82E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863506 3.82E-06 0.00E+00 787 383713.4 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3864309 0.01163 3.82E-06 2YrCancer[* 3.82E-06 0.00E+00 0.0 877 383695.5 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3862727 618 380366.3 9901 DieselExhP 3.82E-06 0.00E+00 3862722 657 381340.7 9901 DieselExhP 0.0116 3.81E-06 2YrCancer[* 3.81E-06 0.00E+00 876 383720.4 3864309 9901 DieselExhP 0.01159 3.81E-06 2YrCancer[* 3.81E-06 0.00E+00 9901 DieselExhP 3862727 3.80E-06 0.00E+00 617 380341.3 0.00E+00 0.00E+00 0.00E+00 439 381227.4 3864871 9901 DieselExhP 0.01156 3.80E-06 2YrCancer[3.80E-06 0.00E+00 616 380316.4 3862727 9901 DieselExhP 3.80E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 875 383745.3 3864308 3.80E-06 0.00E+00 9901 DieselExhP 0.01155 3.79E-06 2YrCancer[* 658 381365.7 3862722 9901 DieselExhP 3.79E-06 0.00E+00 788 383738.2 3863506 9901 DieselExhP 0.01154 3.79E-06 2YrCancer[* 3.79E-06 0.00E+00 9901 DieselExhP 874 383770.2 3864308 0.01154 3.79E-06 2YrCancer[3.79E-06 0.00E+00 3.79E-06 0.00E+00 416 381552.8 3865141 9901 DieselExhP 0.01153 3.79E-06 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 615 380291.4 3862727 0.01153 3.79E-06 2YrCancer[* 3.79E-06 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 513 380403.5 3863821 9901 DieselExhP 0.00E+00 0.0 659 381390.7 3862722 9901 DieselExhP 0.01152 3.78E-06 2YrCancer[* 3.78E-06 0.00E+00 3864308 0.01152 3.78E-06 2YrCancer[* 3.78E-06 0.00E+00 873 383795.1 9901 DieselExhP 401 381927.2 3865139 9901 DieselExhP 0.01151 3.78E-06 2YrCancer[3.78E-06 0.00E+00 614 380266.4 3862727 9901 DieselExhP 0.01151 3.78E-06 2YrCancer[* 3.78E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3864307 383820 0.01151 3.78E-06 2YrCancer[* 3.78E-06 0.00E+00 872 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 744 382725.2 3863416 9901 DieselExhP 0.01149 3.77E-06 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 613 380241.4 3862727 9901 DieselExhP 0.01148 3.77E-06 2YrCancer[* 3.77E-06 0.00E+00 3862722 3.77E-06 0.00E+00 660 381415.6 9901 DieselExhP 0.01148 3.77E-06 2YrCancer[0.00E+00 0.00E+00 0.00E+00 3.77E-06 0.00E+00 503 380551.7 3863943 9901 DieselExhP 0.01147 3.77E-06 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 3863416 9901 DieselExhP 737 382556.2 0.01147 3.77E-06 2YrCancer[* 3.77E-06 0.00E+00 9901 DieselExhP 0.01147 3.77E-06 2YrCancer[* 789 383763.1 3863505 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 871 383844.9 3864307 9901 DieselExhP 0.01147 3.77E-06 2YrCancer[* 3.77E-06 0.00E+00 612 380216.4 3862727 9901 DieselExhP 0.01146 3.76E-06 2YrCancer[* 3.76E-06 0.00E+00 550 379746.3 3863539 9901 DieselExhP 0.01144 3.76E-06 2YrCancer[3.76E-06 0.00E+00 661 381440.6 3862722 9901 DieselExhP 0.01144 3.76E-06 2YrCancer[* 3.76E-06 0.00E+00 3862728 611 380191.4 9901 DieselExhP 0.01143 3.75E-06 2YrCancer[* 3.75E-06 0.00E+00 417 381527.8 3865141 9901 DieselExhP 0.01142 3.75E-06 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 870 383869.8 3864307 9901 DieselExhP 3.75E-06 0.00E+00 0.0 0.01142 3.75E-06 2YrCancer[3 0.00E+00 0.00E+00 0.00E+00 3863505 3.75E-06 0.00E+00 0.0 790 383788 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3.74E-06 0.00E+00 662 381465.6 3862721 9901 DieselExhP 0.0114 3.74E-06 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 0.01139 3.74E-06 2YrCancer[* 3862728 3.74E-06 0.00E+00 610 380166.5 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 689 382015.2 3862866 9901 DieselExhP 3.74E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 869 383894.7 3864307 9901 DieselExhP 0.01138 3.74E-06 2YrCancer[* 3.74E-06 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0.0113 3.71E-06 2YrCancer[* 3.71E-06 0.00E+00 3864032 3.71E-06 0.00E+00 837 384440 9901 DieselExhP 0.0113 3.71E-06 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 865 383994.3 3864305 9901 DieselExhP 0.0113 3.71E-06 2YrCancer[* 3.71E-06 0.00E+00 608 380116.5 3862728 9901 DieselExhP 0.01129 3.71E-06 2YrCancer[* 3.71E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3862721 664 381515.6 9901 DieselExhP 0.01129 3.71E-06 2YrCancer[3.71E-06 0.00E+00 418 381502.9 3865141 9901 DieselExhP 3.71E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00

*HARP - HRACalc v22118 4/7/2023 9:32:13 AM - Cancer Risk - Input File: C:\Users\Desktop\Bullhead Solar\BullheadSolar HRAInput.hra RISK SUM SCENARIO DETAILS INH RISK SOIL RISK DERMAL RMMILK RISWATER RISH RISK CROP RISK BEEF RISK DAIRY RISI PIG RISK CHICKEN FEGG RISK 1ST DRIVE 2ND DRIVI PASTURE (FISH CONCWATER CONC POLABBRE' CONC 792 383837.7 3863504 9901 DieselExhP 3.71E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 384439 3863934 9901 DieselExhP 3.71E-06 0.00E+00 0.0 833 718 382273.6 3863323 3.70E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 3863909 3.70E-06 0.00E+00 832 384438.8 9901 DieselExhP 0.01127 3.70E-06 2YrCancer[0.00E+00 0.00E+00 0.00E+00 3864305 3.70E-06 0.00E+00 864 384019.2 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3865139 400 381952.1 9901 DieselExhP 0.01126 3.70E-06 2YrCancer[* 3.70E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 838 384440.2 3864056 9901 DieselExhP 0.01126 3.70E-06 2YrCancer[* 3.70E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 607 380091.5 3862728 9901 DieselExhP 0.01125 3.70E-06 2YrCancer[* 3.70E-06 0.00E+00 3.69E-06 0.00E+00 3863416 0.01124 3.69E-06 2YrCancer[* 76 382532 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 665 381540.6 3862721 9901 DieselExhP 0.01124 3.69E-06 2YrCancer[3.69E-06 0.00E+00 831 384438.5 3863885 9901 DieselExhP 0.01123 3.69E-06 2YrCancer[* 3.69E-06 0.00E+00 839 384440.4 3864080 3.69E-06 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 571 379595.9 3863146 9901 DieselExhP 3.69E-06 0.00E+00 572 379595.6 3863122 9901 DieselExhP 3.69E-06 0.00E+00 9901 DieselExhP 793 383862.6 3863504 0.01122 3.69E-06 2YrCancer[3.69E-06 0.00E+00 3.68E-06 0.00E+00 570 379596.1 3863170 9901 DieselExhP 0.01121 3.68E-06 2YrCancer[* 3864305 0.01121 3.68E-06 2YrCancer[* 3.68E-06 0.00E+00 863 384044.1 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 573 379595.4 3863097 9901 DieselExhP 0.00E+00 0.0 606 380066.5 3862728 9901 DieselExhP 0.0112 3.68E-06 2YrCancer[* 3.68E-06 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3863195 0.01119 3.68E-06 2YrCancer[* 3.68E-06 0.00E+00 569 379596.3 830 384438.3 3863861 9901 DieselExhP 0.01119 3.68E-06 2YrCancer[* 3.68E-06 0.00E+00 26 382087.9 3863254 9901 DieselExhP 0.01118 3.67E-06 2YrCancer[* 3.67E-06 0.00E+00 840 384440.7 3864105 3.67E-06 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 574 379595.2 3863073 9901 DieselExhP 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 666 381565.5 3862721 9901 DieselExhP 3.67E-06 0.00E+00 551 379721.9 3863539 9901 DieselExhP 0.01116 3.67E-06 2YrCancer[3.67E-06 0.00E+00 3.67E-06 0.00E+00 568 379596.6 3863219 9901 DieselExhP 3864921 437 381227.6 9901 DieselExhP 3.66E-06 0.00E+00 9901 DieselExhP 745 382749.3 3863416 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 605 380041.5 3862728 9901 DieselExhP 0.01114 3.66E-06 2YrCancer[* 3.66E-06 0.00E+00 794 383887.5 3863503 9901 DieselExhP 0.01114 3.66E-06 2YrCancer[3.66E-06 0.00E+00 829 384438.1 3863836 9901 DieselExhP 0.01114 3.66E-06 2YrCancer[3.66E-06 0.00E+00 419 381477.9 3865141 9901 DieselExhP 0.01113 3.66E-06 2YrCancer[* 3.66E-06 0.00E+00 3863048 575 379594.9 9901 DieselExhP 0.01113 3.66E-06 2YrCancer[* 3.66E-06 0.00E+00 384069 3864305 9901 DieselExhP 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 862 567 379596.8 3863244 9901 DieselExhP 3.65E-06 0.00E+00 0.0 0.01112 3.65E-06 2YrCancer[' 0.00E+00 0.00E+00 0.00E+00 3863943 3.65E-06 0.00E+00 504 380526.8 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3.65E-06 0.00E+00 667 381590.5 3862721 9901 DieselExhP 0.0111 3.65E-06 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 0.01109 3.64E-06 2YrCancer[* 3863024 576 379594.7 9901 DieselExhP 3.64E-06 0.00E+00 795 383912.4 3863503 9901 DieselExhP 0.00E+000.00E+00 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 841 384440.9 3864129 9901 DieselExhP 0.01109 3.64E-06 2YrCancer[* 3.64E-06 0.00E+00 3864304 9901 DieselExhP 3.64E-06 0.00E+00 861 384093.9 0.01109 3.64E-06 2YrCancer[604 380016.6 3862728 9901 DieselExhP 0.01108 3.64E-06 2YrCancer[3 3.64E-06 0.00E+00 566 379597.1 3863268 9901 DieselExhP 0.01107 3.64E-06 2YrCancer[* 3.64E-06 0.00E+00 3863812 828 384437.8 9901 DieselExhP 0.01107 3.64E-06 2YrCancer[* 3.64E-06 0.00E+00 860 384118.8 3864304 9901 DieselExhP 3.64E-06 2YrCancer[* 3.64E-06 0.00E+00 0.01107 512 380403.2 3863845 9901 DieselExhP 3.63E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 577 379594.4 3862999 9901 DieselExhP 3.63E-06 0.00E+00 688 382015.2 3862842 9901 DieselExhP 0.01104 3.63E-06 2YrCancer[* 3.63E-06 0.00E+00 3862729 3.62E-06 0.00E+00 603 379991.6 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 796 383937.2 3863502 9901 DieselExhP 0.00E+00 859 384143.7 3864304 9901 DieselExhP 3.62E-06 0.00E+00 3.62E-06 0.00E+00 565 379597.3 3863293 9901 DieselExhP 0.01101 3.62E-06 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 668 381615.5 3862721 9901 DieselExhP 0.01101 3.62E-06 2YrCancer[* 3.62E-06 0.00E+00 578 379594.2 3862975 9901 DieselExhP 0.01099 3.61E-06 2YrCancer[* 3.61E-06 0.00E+00 3863787 827 384437.6 9901 DieselExhP 0.01099 3.61E-06 2YrCancer[3.61E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 842 384441.2 3864154 9901 DieselExhP 0.01099 3.61E-06 2YrCancer[* 3.61E-06 0.00E+00 0.00E+00

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2YrCancer[* 3.58E-06 0.00E+00 3.58E-06 0.00E+00 3862950 0.01091 3.58E-06 2YrCancer[* 579 379594 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 601 379941.6 3862729 9901 DieselExhP 0.01089 3.58E-06 2YrCancer[3.58E-06 0.00E+00 798 383987 3863502 9901 DieselExhP 0.01089 3.58E-06 2YrCancer[* 3.58E-06 0.00E+00 826 384437.4 3863763 0.01089 3.58E-06 2YrCancer[* 3.58E-06 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 857 384193.5 3864303 9901 DieselExhP 0.01086 3.57E-06 2YrCancer[* 3.57E-06 0.00E+00 563 379597.8 3863341 9901 DieselExhP 0.01085 3.56E-06 2YrCancer[* 3.56E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 399 381977.1 3865138 0.01084 3.56E-06 2YrCancer[3.56E-06 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3.56E-06 0.00E+00 670 381665.5 3862720 9901 DieselExhP 0.01083 3.56E-06 2YrCancer[* 843 384441.4 3864178 0.01083 3.56E-06 0.00E+00 9901 DieselExhP 3.56F-06.2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 580 379593.7 3862926 9901 DieselExhP 0.01082 3.55E-06 2YrCancer[* 0.00E+00 0.0 600 379916.6 3862729 9901 DieselExhP 0.0108 3.55E-06 2YrCancer[* 3.55E-06 0.00E+00 799 384011.9 3863501 0.01079 3.54E-06 2YrCancer[* 3.54E-06 0.00E+00 9901 DieselExhP 382027 3865114 9901 DieselExhP 0.01077 3.54E-06 2YrCancer[3.54E-06 0.00E+00 421 381428 3865141 9901 DieselExhP 0.01076 3.53E-06 2YrCancer[* 3.53E-06 0.00E+00 3863366 379598 0.01075 3.53E-06 2YrCancer[* 3.53E-06 0.00E+00 562 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 825 384437.1 3863738 9901 DieselExhP 0.01075 3.53E-06 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 856 384218.4 3864303 9901 DieselExhP 0.01075 3.53E-06 2YrCancer[* 3.53E-06 0.00E+00 3862729 599 379891.6 9901 DieselExhP 0.01072 3.52E-06 2YrCancer[3.52E-06 0.00E+00 3.52E-06 0.00E+00 671 381690.5 3862720 9901 DieselExhP 3864970 9901 DieselExhP 435 381227.8 0.01071 3.52E-06 2YrCancer[* 3.52E-06 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 581 379593.5 3862902 0.01071 3.52E-06 2YrCancer[* 0.00E+00 0.0 505 380501.9 3863943 9901 DieselExhP 0.01069 3.51E-06 2YrCancer[* 3.51E-06 0.00E+00 0.01069 3.51E-06 2YrCancer[* 748 382821 3863437 9901 DieselExhP 3.51E-06 0.00E+00 800 384036.7 3863501 9901 DieselExhP 0.01069 3.51E-06 2YrCancer[3.51E-06 0.00E+00 687 382015.2 3862817 9901 DieselExhP 0.01064 3.50E-06 2YrCancer[* 3.50E-06 0.00E+00 855 384243.4 3864303 0.01063 3.49E-06 2YrCancer[* 3.49E-06 0.00E+00 9901 DieselExhP 561 379598.2 3863390 9901 DieselExhP 0.01061 3.49E-06 2YrCancer[* 0.00E+00 746 382773.5 3863416 9901 DieselExhP 0.01061 3.49E-06 0.00E+00 3.49E-06 2YrCancer[0.00E+00 0.00E+00 0.00E+00 3.49E-06 0.00E+00 0.0 824 384436.9 3863714 9901 DieselExhP 0.01061 3.49E-06 2YrCancer[0.00E+00 0.00E+00 0.00E+00 844 384441.6 3864203 9901 DieselExhP 0.01061 3.49E-06 2YrCancer[* 3.49E-06 0.00E+00 3862729 598 379866.7 9901 DieselExhP 0.0106 3.48E-06 2YrCancer[* 3.48E-06 0.00E+00 672 381715.4 3862720 9901 DieselExhP 3.48E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 801 384061.6 3863500 9901 DieselExhP 0.01059 3.48E-06 2YrCancer[* 3.48E-06 0.00E+00 3862877 9901 DieselExhP 3.48E-06 0.00E+00 582 379593.3 381403 3865141 9901 DieselExhP 0.01051 3.45E-06 2YrCancer[3.45E-06 0.00E+00 422 511 380403 3863870 9901 DieselExhP 0.01049 3.45E-06 2YrCancer[* 3.45E-06 0.00E+00 3864302 854 384268.3 9901 DieselExhP 0.01049 3.45E-06 2YrCancer[* 3.45E-06 0.00E+00 597 379841.7 3862729 9901 DieselExhP 3.44E-06 0.00E+00 0.01048 3.44E-06 2YrCancer[673 381740.4 3862720 9901 DieselExhP 3.44E-06 0.00E+00 3863500 802 384086.5 9901 DieselExhP 3.44E-06 0.00E+00 434 381227.8 3864994 9901 DieselExhP 0.01045 3.43E-06 2YrCancer[* 3.43E-06 0.00E+00 3863415 3.43E-06 0.00E+00 560 379598.5 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 823 384436.6 3863689 9901 DieselExhP 0.00E+00 583 379593 3862853 9901 DieselExhP 3.42E-06 0.00E+00 3862729 3.41E-06 0.00E+00 596 379816.7 9901 DieselExhP 0.01037 3.41E-06 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 674 381765.4 3862720 9901 DieselExhP 0.01035 3.40E-06 2YrCancer[* 3.40E-06 0.00E+00 803 384111.4 3863499 9901 DieselExhP 0.01035 3.40E-06 2YrCancer[* 3.40E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3864302 853 384293.2 9901 DieselExhP 0.01034 3.40E-06 2YrCancer[0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 845 384441.9 3864227 9901 DieselExhP 0.01032 3.39E-06 2YrCancer[* 3.39E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00

*HARP - HRACalc v22118 4/7/2023 9:32:13 AM - Cancer Risk - Input File: C:\Users\Desktop\Bullhead Solar\BullheadSolar HRAInput.hra RISK SUM SCENARIO DETAILS INH RISK SOIL RISK DERMAL RMMILK RISWATER RISH RISK CROP RISK BEEF RISK DAIRY RISI PIG RISK CHICKEN FEGG RISK 1ST DRIVE 2ND DRIVI PASTURE (FISH CONCWATER CONC POLABBRE' CONC 379673 3863538 9901 DieselExhP 0.01031 3.39E-06 2YrCancer[* 3.39E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 595 379791.7 3862730 9901 DieselExhP 0.01024 3.36E-06 2YrCancer[* 3.36E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 559 379598.7 3863439 3.36E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 0.01023 3.36E-06 2YrCancer[* 3863665 3.36E-06 0.00E+00 822 384436.4 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 0.01022 3.36E-06 2YrCancer[* 3.36E-06 0.00E+00 423 381378.1 3865141 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3862828 584 379592.8 9901 DieselExhP 3.36E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3862720 675 381790.4 9901 DieselExhP 0.01021 3.35E-06 2YrCancer[* 3.35E-06 0.00E+00 804 384136.2 3863499 9901 DieselExhP 0.01021 3.35E-06 2YrCancer[* 3.35E-06 0.00E+00 0.0102 3.35E-06 2YrCancer[* 3864302 3.35E-06 0.00E+00 852 384318.1 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 433 381227.9 3865019 9901 DieselExhP 0.01014 3.33E-06 2YrCancer[3.33E-06 0.00E+00 506 380477 3863943 9901 DieselExhP 0.01013 3.33E-06 2YrCancer[* 3.33E-06 0.00E+00 686 382015.2 3862792 9901 DieselExhP 0.01013 3.33E-06 2YrCancer[* 3.33E-06 0.00E+00 0.01011 3.32E-06 2YrCancer[* 382002 3865138 9901 DieselExhP 3.32E-06 0.00E+00 594 379766.7 3862730 9901 DieselExhP 0.01009 3.31E-06 2YrCancer[* 3.31E-06 0.00E+00 805 384161.1 3863499 0.01007 3.31E-06 2YrCancer[* 3.31E-06 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3.30E-06 0.00E+00 676 381815.4 3862720 9901 DieselExhP 0.01004 3.30E-06 2YrCancer[* 72 382297.1 3863322 0.01001 3.29E-06 2YrCancer[* 3.29E-06 0.00E+00 0.00E+ 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 821 384436.2 3863641 9901 DieselExhP 0.01 3.28E-06 2YrCancer[* 0.00E+00 0.0 25 382087.9 3863183 9901 DieselExhP 0.00999 3.28E-06 2YrCancer[* 3.28E-06 0.00E+00 3864302 0.00998 3.28E-06 2YrCancer[* 3.28E-06 0.00E+00 851 384343 9901 DieselExhP 585 379592.5 3862804 9901 DieselExhP 0.00995 3.27E-06 2YrCancer[3.27E-06 0.00E+00 558 379599 3863464 9901 DieselExhP 0.00992 3.26E-06 2YrCancer[* 3.26E-06 0.00E+00 3863498 384186 0.00992 3.26E-06 2YrCancer[* 3.26E-06 0.00E+00 806 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 846 384442.1 3864252 9901 DieselExhP 0.00992 3.26E-06 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 593 379741.7 3862730 9901 DieselExhP 0.00991 3.26E-06 2YrCancer[* 3.26E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3865142 424 381353.1 9901 DieselExhP 0.00987 3.24E-06 2YrCancer[3.24E-06 0.00E+00 3.24E-06 0.00E+00 677 381840.4 3862720 9901 DieselExhP 0.00985 3.24E-06 2YrCancer[* 3863416 9901 DieselExhP 747 382797.6 0.00976 3.21E-06 2YrCancer[* 3.21E-06 0.00E+00 9901 DieselExhP 432 381228 3865044 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 807 384210.9 3863498 9901 DieselExhP 0.00975 3.20E-06 2YrCancer[* 3.20E-06 0.00E+00 0.00972 3.19E-06 2YrCancer[* 592 379716.8 3862730 9901 DieselExhP 3.19E-06 0.00E+00 820 384435.9 3863616 9901 DieselExhP 0.00971 3.19E-06 2YrCancer[3.19E-06 0.00E+00 850 384367.9 3864301 9901 DieselExhP 0.00971 3.19E-06 2YrCancer[* 3.19E-06 0.00E+00 3863895 510 380402.7 0.00968 3.18E-06 2YrCancer[* 3.18E-06 0.00E+00 9901 DieselExhP 678 381865.3 3862719 9901 DieselExhP 0.00963 3.16E-06 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 586 379592.3 3862779 9901 DieselExhP 0.00956 3.14E-06 2YrCancer[* 3.14E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863497 3.14E-06 0.00E+00 0.0 808 384235.7 9901 DieselExhP 0.00956 3.14E-06 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 3.12E-06 0.00E+00 591 379691.8 3862730 9901 DieselExhP 0.00949 3.12E-06 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 0.00943 3.10E-06 2YrCancer[* 3862768 685 382015.2 9901 DieselExhP 3.10E-06 0.00E+00 425 381328.2 3865142 9901 DieselExhP 0.00942 3.09E-06 2YrCancer[* 0.00E+000.00E+00 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 554 379648.5 3863538 9901 DieselExhP 0.0094 3.09E-06 2YrCancer[* 3.09E-06 0.00E+00 507 380452.1 3863944 9901 DieselExhP 0.00938 3.08E-06 2YrCancer[* 3.08E-06 0.00E+00 679 381890.3 3862719 9901 DieselExhP 0.00938 3.08E-06 2YrCancer[3.08E-06 0.00E+00 27 382857.8 3863438 9901 DieselExhP 0.00936 3.07E-06 2YrCancer[* 3.07E-06 0.00E+00 3863497 809 384260.6 9901 DieselExhP 0.00935 3.07E-06 2YrCancer[* 3.07E-06 0.00E+00 819 384435.7 3863592 9901 DieselExhP 0.00935 3.07E-06 2YrCancer[* 3.07E-06 0.00E+00 849 384392.8 3864301 9901 DieselExhP 0.00934 3.07E-06 2YrCancer[* 3.07E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.00924 3.04E-06 2YrCancer[* 3864276 847 384442.3 9901 DieselExhP 3.04E-06 0.00E+00 557 379599.2 3863488 9901 DieselExhP 0.00923 3.03E-06 2YrCancer[* 3.03E-06 0.00E+00 3865068 0.00922 3.03E-06 2YrCancer[* 3.03E-06 0.00E+00 431 381228.1 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 590 379666.8 3862730 9901 DieselExhP 0.00921 3.03E-06 2YrCancer[* 0.00E+00 810 384285.5 3863496 9901 DieselExhP 3.00E-06 0.00E+00 3862719 2.98E-06 0.00E+00 0.00E+ 680 381915.3 9901 DieselExhP 0.00906 2.98E-06 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 77 382821.7 3863416 9901 DieselExhP 0.00899 2.95E-06 2YrCancer[* 2.95E-06 0.00E+00 382027 3865138 9901 DieselExhP 0.00897 2.95E-06 2YrCancer[* 2.95E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 63 3862755 587 379592.1 9901 DieselExhP 0.00893 2.93E-06 2YrCancer[2.93E-06 0.00E+00 818 384435.5 3863567 9901 DieselExhP 0.00889 2.92E-06 2YrCancer[* 2.92E-06 0.00E+00 0.00E+ 0.00E+00 0.00E+00 0.00E+00

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3863919 9901 DieselExhP 0.0085 2.79E-06 2YrCancer[* 2.79E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 812 384335.2 3863496 9901 DieselExhP 0.0085 2.79E-06 2YrCancer[* 2.79E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3862730 0.00829 2.72E-06 2YrCancer[* 2.72E-06 0.00E+00 0.0 588 379616.8 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 684 382015.2 3862743 9901 DieselExhP 0.00825 2.71E-06 2YrCancer[2.71E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 508 380427.2 3863944 9901 DieselExhP 0.00823 2.70E-06 2YrCancer[* 2.70E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 817 384435.2 3863543 0.00822 2.70E-06 2YrCancer[* 2.70E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 9901 DieselExhP 556 379599.4 3863513 0.0081 2.66E-06 2YrCancer[* 2.66E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 682 381965.3 3862719 9901 DieselExhP 0.0081 2.66E-06 2YrCancer[* 2.66E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 427 381278.2 3865142 0.00809 2.66E-06 2YrCancer[3 2.66E-06 0.00E+00 2.66E-06 0.00E+00 0.0 555 379624.1 3863537 9901 DieselExhP 0.00809 2.66E-06 2YrCancer[* 813 384360.1 3863495 0.00805 2.64E-06 2YrCancer[* 2.64E-06 0.00E+00 0.0 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 80 384442.6 3864300 9901 DieselExhP 0.00783 2.57E-06 2YrCancer[* 0.00E+00 0.0 69 379591.8 3862730 9901 DieselExhP 0.0078 2.56E-06 2YrCancer[* 2.56E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 3865118 0.00744 2.44E-06 2YrCancer[* 2.44E-06 0.00E+00 0.0 429 381228.2 9901 DieselExhP 384385 3863495 9901 DieselExhP 2.44E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9 379542.5 3862885 9901 DieselExhP 0.0073 2.40E-06 2YrCancer[* 2.40E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3862719 683 381990.3 0.00729 2.39E-06 2YrCancer[* 2.39E-06 0.00E+00 0.0 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 384435 3863518 9901 DieselExhP 0.00715 2.35E-06 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 816 428 381253.3 3865142 9901 DieselExhP 0.00705 2.32E-06 2YrCancer[* 2.32E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 66 380402.2 3863944 9901 DieselExhP 0.00674 2.21E-06 2YrCancer[2.21E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 2.21E-06 0.00E+00 0.0 70 382015.2 3862719 9901 DieselExhP 0.00673 2.21E-06 2YrCancer[* 3862795 9901 DieselExhP 10 379539.8 0.00669 2.20E-06 2YrCancer[* 2.20E-06 0.00E+00 815 384409.9 9901 DieselExhP 3863494 0.00647 2.13E-06 2YrCancer[* 0.00E+000.00E+00 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 68 379599.7 3863537 9901 DieselExhP 0.00645 2.12E-06 2YrCancer[* 2.12E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 22 381797.9 3862684 9901 DieselExhP 0.00644 2.12E-06 2YrCancer[* 2.12E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 79 384434.7 3863494 9901 DieselExhP 0.00555 1.82E-06 2YrCancer[1.82E-06 0.00E+00 64 381228.3 3865142 9901 DieselExhP 0.00516 1.70E-06 2YrCancer[* 1.70E-06 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3862687 23 382055.7 0.0047 1.54E-06 2YrCancer[* 1.54E-06 0.00E+00 9901 DieselExhP 24 382513.1 3862765 9901 DieselExhP 0.00291 9.56E-07 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 60 382014.3 3862504 9901 DieselExhP 0.00267 8.77E-07 2YrCancer[* 8.77E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 338 382014.4 3862456 0.00262 8.61E-07 0.00E+00 0.0 9901 DieselExhP 8.61E-07 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 3863181 8.51E-07 0.00E+00 0.0 8 379268.7 9901 DieselExhP 0.00259 8.51E-07 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 3862480 0.00256 8.41E-07 2YrCancer[* 8.41E-07 0.00E+00 0.0 337 382014.4 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 397 382002.4 3862483 9901 DieselExhP 0.00254 8.34E-07 2YrCancer[* 0.00E+000.00E+00 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 188 379189.8 3862826 9901 DieselExhP 0.00248 8.15E-07 2YrCancer[* 8.15E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 189 379190.1 3862851 9901 DieselExhP 0.00248 8.15E-07 2YrCancer[* 8.15E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 190 379190.5 3862875 9901 DieselExhP 0.00248 8.15E-07 2YrCancer[* 8.15E-07 0.00E+00 191 379190.8 3862900 9901 DieselExhP 0.00248 8.15E-07 2YrCancer[* 8.15E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3862801 8.11E-07 2YrCancer[* 187 379189.5 9901 DieselExhP 0.00247 8.11E-07 0.00E+00 192 379191.2 3862925 9901 DieselExhP 0.00247 8.11E-07 2YrCancer[* 8.11E-07 0.00E+00 0.0 186 379189.1 3862776 9901 DieselExhP 0.00246 8.08E-07 2YrCancer[* 8.08E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.00246 8.08E-07 2YrCancer[* 193 379191.5 3862950 9901 DieselExhP 8.08E-07 0.00E+00 185 379188.8 3862751 9901 DieselExhP 0.00245 8.05E-07 2YrCancer[3 8.05E-07 0.00E+00 0.0 3862975 8.02E-07 0.00E+00 0.0 194 379191.8 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 52 379188.4 3862727 9901 DieselExhP 0.00243 7.98E-07 2YrCancer[* 0.00E+00 195 379192.2 3863000 9901 DieselExhP 0.00242 7.95E-07 2YrCancer[* 7.95E-07 0.00E+00 3863471 7.92E-07 0.00E+00 0.0 28 384824.8 9901 DieselExhP 0.00241 7.92E-07 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 196 379192.5 3863024 9901 DieselExhP 0.0024 7.88E-07 2YrCancer[* 7.88E-07 0.00E+00 197 379192.9 3863049 9901 DieselExhP 0.00238 7.82E-07 2YrCancer[* 7.82E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863074 0.00235 198 379193.2 9901 DieselExhP 7.72E-07 2YrCancer[7.72E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 184 379163.5 3862726 9901 DieselExhP 0.00233 7.65E-07 2YrCancer[* 7.65E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00

*HARP - HRACalc v22118 4/7/2023 9:32:13 AM - Cancer Risk - Input File: C:\Users\Desktop\Bullhead Solar\BullheadSolar HRAInput.hra RISK SUM SCENARIO DETAILS INH RISK SOIL RISK DERMAL RMMILK RISWATER RISH RISK CROP RISK BEEF RISK DAIRY RISI PIG RISK CHICKEN FEGG RISK 1ST DRIVE 2ND DRIVI PASTURE (FISH CONCWATER CONC POLABBRE' CONC 199 379193.5 3863099 7.62E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 339 382014.5 3862432 9901 DieselExhP 0.00232 7.62E-07 2YrCancer[* 7.62E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 396 381990.5 3862461 9901 DieselExhP 0.00232 7.62E-07 2YrCancer[* 7.62E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.00229 7.52E-07 2YrCancer[* 3863124 7.52E-07 0.00E+00 0.0 200 379193.9 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3863149 7.39E-07 0.00E+00 201 379194.2 9901 DieselExhP 0.00225 7.39E-07 2YrCancer[0.00E+00 0.00E+00 0.00E+00 3862726 0.00224 7.36E-07 2YrCancer[* 183 379138.6 9901 DieselExhP 7.36E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3862408 340 382014.6 9901 DieselExhP 0.00224 7.36E-07 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 202 379194.5 3863173 9901 DieselExhP 0.00221 7.26E-07 2YrCancer[* 7.26E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 341 382014.7 3862384 0.00218 7.16E-07 2YrCancer[* 7.16E-07 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 203 379194.9 3863198 9901 DieselExhP 0.00217 7.13E-07 2YrCancer[* 7.13E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 182 379113.6 3862726 9901 DieselExhP 0.00216 7.10E-07 2YrCancer[* 7.10E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 395 381978.6 3862440 0.00215 7.06E-07 2YrCancer[* 7.06E-07 0.00E+00 9901 DieselExhP 204 379195.2 3863223 9901 DieselExhP 0.00213 7.00E-07 2YrCancer[* 7.00E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 181 379088.7 3862726 9901 DieselExhP 0.00208 6.83E-07 2YrCancer[* 6.83E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 205 379195.6 3863248 0.00208 6.83E-07 0.00E+00 6.83E-07 2YrCancer[0.00E+00 0.00E+00 0.00E+00 6.80E-07 0.00E+00 0.0 342 382014.8 3862359 9901 DieselExhP 0.00207 6.80E-07 2YrCancer[382015 3862287 0.00206 6.77E-07 2YrCancer[* 6.77E-07 0.00E+00 345 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 206 379195.9 3863273 9901 DieselExhP 0.00203 6.67E-07 2YrCancer[* 0.00E+00 0.0 29 380446.6 3864400 9901 DieselExhP 0.00202 6.64E-07 2YrCancer[* 6.64E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 180 379063.7 0.00E+00 0.00E+00 0.00E+00 3862726 0.00201 6.60E-07 2YrCancer[* 6.60E-07 0.00E+00 0.0 9901 DieselExhP 394 381966.7 3862418 9901 DieselExhP 0.00201 6.60E-07 2YrCancer[* 6.60E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 343 382014.9 3862335 9901 DieselExhP 0.00199 6.54E-07 2YrCancer[* 6.54E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863297 207 379196.2 0.00198 6.50E-07 2YrCancer[* 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 179 379038.8 3862726 9901 DieselExhP 0.00194 6.37E-07 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 344 382015 3862311 9901 DieselExhP 0.00194 6.37E-07 2YrCancer[* 6.37E-07 0.00E+00 3863322 208 379196.6 9901 DieselExhP 0.00193 6.34E-07 2YrCancer[* 6.34E-07 0.00E+00 6.24E-07 0.00E+00 0.0 393 381954.9 3862397 9901 DieselExhP 0.0019 6.24E-07 2YrCancer[3863347 6.21E-07 2YrCancer[* 209 379196.9 9901 DieselExhP 0.00189 6.21E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 178 379013.9 3862726 0.00188 6.18E-07 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 349 382015.4 3862190 9901 DieselExhP 0.00185 6.08E-07 2YrCancer[* 6.08E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 210 379197.3 3863372 9901 DieselExhP 0.00184 6.04E-07 2YrCancer[6.04E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 4 379091.8 3862416 9901 DieselExhP 0.00183 6.01E-07 2YrCancer[* 6.01E-07 0.00E+00 177 378988.9 3862726 9901 DieselExhP 0.00182 5.98E-07 2YrCancer[* 5.98E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863397 211 379197.6 9901 DieselExhP 0.0018 5.91E-07 2YrCancer[* 5.91E-07 0.00E+00 346 382015.1 3862263 9901 DieselExhP 0.0018 5.91E-07 2YrCancer[* 0.00E+00 381943 3862375 9901 DieselExhP 0.0018 5.91E-07 2YrCancer[* 5.91E-07 0.00E+00 0.0 392 0.00E+00 0.00E+00 0.00E+00 216 379199.3 3863521 0.00178 5.85E-07 2YrCancer[* 5.85E-07 0.00E+00 0.0 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3862726 5.78E-07 0.00E+00 378964 9901 DieselExhP 0.00176 5.78E-07 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 0.00176 5.78E-07 2YrCancer[* 212 379197.9 3863422 9901 DieselExhP 5.78E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3862238 347 382015.2 9901 DieselExhP 0.00175 5.75E-07 2YrCancer[* 0.00E+000.00E+00 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 217 379176 3863546 9901 DieselExhP 0.00173 5.68E-07 2YrCancer[* 5.68E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 348 382015.3 3862214 9901 DieselExhP 0.00173 5.68E-07 2YrCancer[* 5.68E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 53 379199.6 3863546 9901 DieselExhP 0.00172 5.65E-07 2YrCancer[* 5.65E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 213 379198.3 3863446 9901 DieselExhP 0.00172 5.65E-07 2YrCancer[* 5.65E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 391 381931.1 3862354 9901 DieselExhP 0.00172 5.65E-07 2YrCancer[* 5.65E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 378939 3862726 9901 DieselExhP 0.00171 5.62E-07 2YrCancer[* 5.62E-07 0.00E+00 0.0 175 379199 3863496 9901 DieselExhP 0.00171 5.62E-07 2YrCancer[* 5.62E-07 0.00E+00 215 0.0017 5.58E-07 2YrCancer[* 214 379198.6 3863471 9901 DieselExhP 5.58E-07 0.00E+00 353 382015.7 3862093 9901 DieselExhP 0.00169 5.55E-07 2YrCancer[* 5.55E-07 0.00E+00 174 378914.1 3862726 0.00166 5.45E-07 2YrCancer[* 5.45E-07 0.00E+00 0.0 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 390 381919.2 3862333 9901 DieselExhP 0.00164 5.39E-07 2YrCancer[* 0.00E+00 12 380328.4 3862105 9901 DieselExhP 0.00161 5.29E-07 2YrCancer[* 5.29E-07 0.00E+00 3862726 5.29E-07 0.00E+00 173 378889.1 9901 DieselExhP 0.00161 5.29E-07 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 350 382015.5 3862166 9901 DieselExhP 0.00161 5.29E-07 2YrCancer[* 5.29E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 11 380216.2 3862088 9901 DieselExhP 0.00159 5.22E-07 2YrCancer[* 5.22E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3862142 351 382015.6 9901 DieselExhP 0.00158 5.19E-07 2YrCancer[5.19E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 382016 3862021 9901 DieselExhP 0.00158 5.19E-07 2YrCancer[* 5.19E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00

*HARP - HRACalc v22118 4/7/2023 9:32:13 AM - Cancer Risk - Input File: C:\Users\Desktop\Bullhead Solar\BullheadSolar HRAInput.hra RISK SUM SCENARIO DETAILS INH RISK SOIL RISK DERMAL RMMILK RISWATER RISH RISK CROP RISK BEEF RISK DAIRY RISHPIG RISK CHICKEN FEGG RISK 1ST DRIVE 2ND DRIVEPASTURE (FISH CONCWATER CONC POLABBRE' CONC 9901 DieselExhP 389 381907.3 3862311 0.00157 5.16E-07 2YrCancer[* 5.16E-07 0.00E+00 172 378864.2 3862726 9901 DieselExhP 0.00156 5.12E-07 2YrCancer[* 5.12E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 352 382015.6 3862118 9901 DieselExhP 0.00156 5.12E-07 2YrCancer[* 5.12E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.00152 4.99E-07 2YrCancer[* 3862726 4.99E-07 0.00E+00 0.0 171 378839.3 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3862290 4.96E-07 0.00E+00 0.0 388 381895.4 9901 DieselExhP 0.00151 4.96E-07 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 3864015 0.0015 4.93E-07 2YrCancer[* 4.93E-07 0.00E+00 46 379742.3 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3863546 218 379152.3 9901 DieselExhP 0.0015 4.93E-07 2YrCancer[* 4.93E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 45 379814.9 3864095 9901 DieselExhP 4.86E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 170 378814.3 3862726 0.00148 4.86E-07 2YrCancer[* 4.86E-07 0.00E+00 0.0 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 61 382016.3 3861924 9901 DieselExhP 0.00147 4.83E-07 2YrCancer[* 4.83E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 354 382015.8 3862069 9901 DieselExhP 4.80E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 387 381883.6 3862268 9901 DieselExhP 0.00145 4.76E-07 2YrCancer[* 4.76E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 169 378789.4 3862726 9901 DieselExhP 0.00144 4.73E-07 2YrCancer[* 4.73E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 355 382015.9 3862045 9901 DieselExhP 0.00144 4.73E-07 2YrCancer[* 4.73E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 219 379128.7 3863546 0.00141 4.63E-07 2YrCancer[* 4.63E-07 0.00E+00 3862726 4.60E-07 0.00E+00 0.0 168 378764.4 9901 DieselExhP 0.0014 4.60E-07 2YrCancer[49 379422.9 3863797 0.00139 4.57E-07 2YrCancer[* 4.57E-07 0.00E+00 0.0 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 386 381871.7 3862247 9901 DieselExhP 0.00139 4.57E-07 2YrCancer[* 0.00E+00 0.0 7 379506.9 3861952 9901 DieselExhP 0.00137 4.50E-07 2YrCancer[* 4.50E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 167 378739.5 0.00E+00 0.00E+00 0.00E+00 3862725 0.00137 4.50E-07 2YrCancer[* 4.50E-07 0.00E+00 0.0 9901 DieselExhP 357 382016.1 3861997 9901 DieselExhP 0.00136 4.47E-07 2YrCancer[* 4.47E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 220 379105 3863546 9901 DieselExhP 0.00134 4.40E-07 2YrCancer[* 4.40E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3862225 385 381859.8 0.00134 4.40E-07 2YrCancer[* 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 47 379640.7 3864008 9901 DieselExhP 0.00133 4.37E-07 2YrCancer[* 0.00E+00 0.0 166 378714.6 3862725 9901 DieselExhP 4.37E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 358 382016.2 3861972 9901 DieselExhP 0.00133 4.37E-07 2YrCancer[* 4.37E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 4.37E-07 0.00E+00 0.0 359 382016.2 3861948 9901 DieselExhP 0.00133 4.37E-07 2YrCancer[* 3862465 3 378685.2 9901 DieselExhP 0.00131 4.30E-07 2YrCancer[* 4.30E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 5 378866.2 3862086 0.0013 4.27E-07 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 165 378689.6 3862725 9901 DieselExhP 0.0013 4.27E-07 2YrCancer[* 4.27E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 221 379081.3 3863546 9901 DieselExhP 0.0013 4.27E-07 2YrCancer[* 4.27E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 384 381847.9 3862204 9901 DieselExhP 0.0013 4.27E-07 2YrCancer[* 4.27E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 48 379437.4 3863870 9901 DieselExhP 4.20E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3861963 6 379019.5 9901 DieselExhP 0.00127 4.17E-07 2YrCancer[* 4.17E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 164 378664.7 3862725 9901 DieselExhP 0.00127 4.17E-07 2YrCancer[* 0.00E+00 222 379057.7 3863546 9901 DieselExhP 0.00126 4.14E-07 2YrCancer[* 4.14E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3862182 4.11E-07 0.00E+00 0.0 383 381836 9901 DieselExhP 0.00125 4.11E-07 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 3862725 4.07E-07 0.00E+00 0.0 163 378639.7 9901 DieselExhP 0.00124 4.07E-07 2YrCancer[* 13 380744.7 3861973 4.04E-07 0.00E+00 0.0 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3862725 162 378614.8 9901 DieselExhP 0.00E+000.00E+00 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 223 379034 3863545 9901 DieselExhP 0.00122 4.01E-07 2YrCancer[* 4.01E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 382 381824.1 3862161 9901 DieselExhP 0.00121 3.97E-07 2YrCancer[* 3.97E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 161 378589.9 3862725 9901 DieselExhP 0.00119 3.91E-07 2YrCancer[* 3.91E-07 0.00E+00 224 379010.4 3863545 9901 DieselExhP 0.00119 3.91E-07 2YrCancer[* 3.91E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3864110 44 379633.4 9901 DieselExhP 3.84E-07 0.00E+00 381 381812.3 3862139 9901 DieselExhP 3.84E-07 0.00E+00 160 378564.9 3862725 9901 DieselExhP 3.81E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 225 378986.7 3863545 9901 DieselExhP 3.81E-07 0.00E+00 378540 3862725 9901 DieselExhP 0.00114 3.74E-07 2YrCancer[* 3.74E-07 0.00E+00 0.0 378963 3863545 3.71E-07 0.00E+00 0.0 226 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 360 381991.5 3861924 9901 DieselExhP 0.00113 3.71E-07 2YrCancer[* 0.00E+00 380 381800.4 3862118 9901 DieselExhP 0.00113 3.71E-07 2YrCancer[* 3.71E-07 0.00E+00 3862725 3.68E-07 0.00E+00 0.0 158 378515 9901 DieselExhP 0.00112 3.68E-07 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 157 378490.1 3862725 9901 DieselExhP 0.0011 3.61E-07 2YrCancer[* 3.61E-07 0.00E+00 227 378939.4 3863545 9901 DieselExhP 0.0011 3.61E-07 2YrCancer[* 3.61E-07 0.00E+00 3862096 0.0011 3.61E-07 2YrCancer[* 379 381788.5 9901 DieselExhP 3.61E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 43 379408.3 3863993 9901 DieselExhP 0.00109 3.58E-07 2YrCancer[* 3.58E-07 0.00E+00 0.00E+00

*HARP - HRACalc v22118 4/7/2023 9:32:13 AM - Cancer Risk - Input File: C:\Users\Desktop\Bullhead Solar\BullheadSolar HRAInput.hra RISK SUM SCENARIO DETAILS INH RISK SOIL RISK DERMAL RMMILK RISWATER RISH RISK CROP RISK BEEF RISK DAIRY RISI PIG RISK CHICKEN FEGG RISK 1ST DRIVE 2ND DRIVI PASTURE (FISH CONCWATER CONC POLABBRE' CONC 156 378465.2 3862725 9901 DieselExhP 0.00108 3.55E-07 2YrCancer[* 3.55E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 228 378915.7 3863545 9901 DieselExhP 0.00108 3.55E-07 2YrCancer[* 3.55E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 378 381776.6 3862075 9901 DieselExhP 3.51E-07 0.00E+00 0.00106 3.48E-07 2YrCancer[* 155 378440.2 3862725 3.48E-07 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3863545 3.48E-07 0.00E+00 229 378892.1 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3864044 42 379408.3 9901 DieselExhP 0.00104 3.42E-07 2YrCancer[* 3.42E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3862725 154 378415.3 9901 DieselExhP 0.00104 3.42E-07 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 230 378868.4 3863545 9901 DieselExhP 0.00104 3.42E-07 2YrCancer[* 3.42E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 3862053 0.00103 3.38E-07 2YrCancer[* 3.38E-07 0.00E+00 377 381764.7 0.00E+00 0.00E+00 0.00E+00 153 378390.3 3862725 9901 DieselExhP 0.00102 3.35E-07 2YrCancer[* 3.35E-07 0.00E+00 231 378844.7 3863545 9901 DieselExhP 0.00102 3.35E-07 2YrCancer[* 3.35E-07 0.00E+00 41 379422.9 3864088 0.00101 3.32E-07 2YrCancer[* 3.32E-07 0.00E+00 9901 DieselExhP 152 378365.4 3862725 9901 DieselExhP 0.001 3.28E-07 2YrCancer[* 3.28E-07 0.00E+00 232 378821.1 3863545 9901 DieselExhP 0.001 3.28E-07 2YrCancer[* 3.28E-07 0.00E+00 9901 DieselExhP 361 381966.6 3861924 0.001 3.28E-07 2YrCancer[* 3.28E-07 0.00E+00 3.28E-07 0.00E+00 0.0 376 381752.8 3862032 9901 DieselExhP 0.001 3.28E-07 2YrCancer[* 151 378340.5 3862725 0.00099 3.25E-07 2YrCancer[* 3.25E-07 0.00E+00 0.0 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 54 378797.4 3863545 9901 DieselExhP 0.00098 3.22E-07 2YrCancer[* 0.00E+00 0.0 375 381741 3862010 9901 DieselExhP 0.00098 3.22E-07 2YrCancer[* 3.22E-07 0.00E+00 150 378315.5 3862724 0.00097 3.19E-07 2YrCancer[* 3.19E-07 0.00E+00 9901 DieselExhP 233 378797.1 3863569 9901 DieselExhP 0.00096 3.15E-07 2YrCancer[* 3.15E-07 0.00E+00 149 378290.6 3862724 9901 DieselExhP 0.00095 3.12E-07 2YrCancer[* 3.12E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863593 234 378796.9 0.00095 3.12E-07 2YrCancer[* 0.00E+00 9901 DieselExhP 3.12E-07 0.00E+00 0.00E+00 0.00E+00 374 381729.1 3861989 9901 DieselExhP 0.00095 3.12E-07 2YrCancer[* 0.00E+00 0.0 40 379408.3 3864160 9901 DieselExhP 0.00094 3.09E-07 2YrCancer[* 3.09E-07 0.00E+00 3862724 148 378265.6 9901 DieselExhP 0.00094 3.09E-07 2YrCancer[3.09E-07 0.00E+00 3.09E-07 0.00E+00 362 381941.8 3861924 9901 DieselExhP 0.00094 3.09E-07 2YrCancer[3862724 147 378240.7 9901 DieselExhP 0.00093 3.06E-07 2YrCancer[* 3.06E-07 0.00E+00 9901 DieselExhP 235 378796.6 3863616 0.00093 3.06E-07 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 373 381717.2 3861967 9901 DieselExhP 0.00093 3.06E-07 2YrCancer[* 3.06E-07 0.00E+00 236 378796.3 3863640 9901 DieselExhP 0.00092 3.02E-07 2YrCancer[* 3.02E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 146 378215.8 3862724 9901 DieselExhP 0.00091 2.99E-07 2YrCancer[* 2.99E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 381917 3861924 9901 DieselExhP 0.00091 2.99E-07 2YrCancer[* 2.99E-07 0.00E+00 363 3862724 145 378190.8 9901 DieselExhP 0.0009 2.96E-07 2YrCancer[* 0.00E+00 2.96E-07 237 378796 3863664 9901 DieselExhP 0.0009 2.96E-07 2YrCancer[* 0.00E+00 364 381892.1 3861924 9901 DieselExhP 0.0009 2.96E-07 2YrCancer[* 2.96E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3861946 0.0009 2.96E-07 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 372 381705.3 9901 DieselExhP 2.92E-07 0.00E+00 0.0 144 378165.9 3862724 9901 DieselExhP 0.00089 2.92E-07 2YrCancer[* 0.00089 2.92E-07 2YrCancer[* 3863688 2.92E-07 0.00E+00 238 378795.8 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 365 381867.3 3861924 9901 DieselExhP 0.00089 2.92E-07 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 62 381693.4 3861924 9901 DieselExhP 0.00088 2.89E-07 2YrCancer[* 2.89E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 366 381842.5 3861924 9901 DieselExhP 0.00088 2.89E-07 2YrCancer[* 2.89E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 367 381817.6 3861924 9901 DieselExhP 0.00088 2.89E-07 2YrCancer[* 2.89E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 368 381792.8 3861924 9901 DieselExhP 0.00088 2.89E-07 2YrCancer[* 2.89E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3861924 2.89E-07 2YrCancer[* 369 381767.9 9901 DieselExhP 0.00088 2.89E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 370 381743.1 3861924 9901 DieselExhP 0.00088 2.89E-07 2YrCancer[* 0.00E+00 371 381718.3 3861924 9901 DieselExhP 0.00088 2.89E-07 2YrCancer[* 2.89E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 143 378140.9 3862724 0.00087 9901 DieselExhP 2.86E-07 2YrCancer[* 2.86E-07 0.00E+00 239 378795.5 3863711 9901 DieselExhP 0.00087 2.86F-07 2YrCancer[3 2.86E-07 0.00E+00 0.0 3864139 0.00086 2.83E-07 2YrCancer[* 2.83E-07 0.00E+00 0.0 39 379248.6 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 142 378116 3862724 9901 DieselExhP 0.00086 2.83E-07 2YrCancer[* 0.00E+00 240 378795.2 3863735 9901 DieselExhP 0.00086 2.83E-07 2YrCancer[* 2.83E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3862724 2.79E-07 0.00E+00 0.0 141 378091.1 9901 DieselExhP 0.00085 2.79E-07 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 140 378066.1 3862724 9901 DieselExhP 0.00084 2.76E-07 2YrCancer[* 2.76E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 241 378794.9 3863759 9901 DieselExhP 0.00084 2.76E-07 2YrCancer[* 2.76E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3861639 0.00083 16 382086.4 9901 DieselExhP 2.73E-07 2YrCancer[2.73E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 139 378041.2 3862724 9901 DieselExhP 0.00083 2.73E-07 2YrCancer[* 2.73E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00

*HARP - HRACalc v22118 4/7/2023 9:32:13 AM - Cancer Risk - Input File: C:\Users\Desktop\Bullhead Solar\BullheadSolar HRAInput.hra RISK SUM SCENARIO DETAILS INH RISK SOIL RISK DERMAL RMMILK RISWATER RISH RISK CROP RISK BEEF RISK DAIRY RISHPIG RISK CHICKEN FEGG RISK 1ST DRIVE 2ND DRIVEPASTURE (FISH CONCWATER CONC POLID POLABBRE'CONC 242 378794.6 3863783 2.73E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 379147 3864124 9901 DieselExhP 0.00082 2.69E-07 2YrCancer[* 2.69E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 138 378016.2 3862724 9901 DieselExhP 0.00082 2.69E-07 2YrCancer[* 2.69E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.00082 2.69E-07 2YrCancer[* 3863806 2.69E-07 0.00E+00 0.0 243 378794.4 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3862724 0.00081 2.66E-07 2YrCancer[* 2.66E-07 0.00E+00 0.0 137 377991.3 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 0.0008 2.63E-07 2YrCancer[* 2.63E-07 0.00E+00 0.0 14 380971.9 3861689 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 15 381963.2 3861691 9901 DieselExhP 0.0008 2.63E-07 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 35 379372 3864335 9901 DieselExhP 0.0008 2.63E-07 2YrCancer[* 2.63E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3862724 0.0008 2.63E-07 2YrCancer[* 2.63E-07 0.00E+00 136 377966.4 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 244 378794.1 3863830 9901 DieselExhP 0.0008 2.63E-07 2YrCancer[* 2.63E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 135 377941.4 3862724 9901 DieselExhP 0.00079 2.60E-07 2YrCancer[* 2.60E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 245 378793.8 3863854 0.00079 2.60E-07 2YrCancer[* 2.60E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 0.00078 2.56E-07 2YrCancer[* 134 377916.5 3862724 9901 DieselExhP 2.56E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 246 378793.5 3863878 9901 DieselExhP 0.00078 2.56E-07 2YrCancer[* 2.56E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 32 379422.9 3864429 0.00077 2.53E-07 2YrCancer[* 2.53E-07 0.00E+00 3864277 2.53E-07 0.00E+00 36 379219.6 9901 DieselExhP 0.00077 2.53E-07 2YrCancer[3 3864204 0.00077 2.53E-07 2YrCancer[* 2.53E-07 0.00E+00 0.0 37 379125.2 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 133 377891.5 3862724 9901 DieselExhP 0.00077 2.53E-07 2YrCancer[* 0.00E+00 0.0 247 378793.3 3863901 9901 DieselExhP 0.00077 2.53E-07 2YrCancer[* 2.53E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 132 377866.6 3862723 0.00076 2.50E-07 2YrCancer[* 2.50E-07 0.00E+00 0.0 9901 DieselExhP 378793 3863925 9901 DieselExhP 0.00076 2.50E-07 2YrCancer[* 2.50E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 33 379335.7 3864407 9901 DieselExhP 0.00075 2.46E-07 2YrCancer[* 2.46E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863949 55 378792.7 0.00075 2.46E-07 2YrCancer[* 0.00E+00 9901 DieselExhP 2.46E-07 0.00E+00 0.00E+00 0.00E+00 131 377841.6 3862723 9901 DieselExhP 0.00075 2.46E-07 2YrCancer[* 0.00E+00 0.0 34 379226.8 3864342 9901 DieselExhP 0.00074 2.43E-07 2YrCancer[* 2.43E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3862723 2.43E-07 0.00E+00 0.0 130 377816.7 9901 DieselExhP 0.00074 2.43E-07 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 2.43E-07 0.00E+00 0.0 249 378768.6 3863949 9901 DieselExhP 0.00074 2.43E-07 2YrCancer[* 3862723 128 377766.8 9901 DieselExhP 0.00073 2.40E-07 2YrCancer[* 2.40E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 129 377791.8 3862723 0.00073 2.40E-07 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 250 378744.5 3863949 9901 DieselExhP 0.00073 2.40E-07 2YrCancer[* 2.40E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.00072 2.37E-07 2YrCancer[* 127 377741.9 3862723 9901 DieselExhP 2.37E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 251 378720.4 3863949 9901 DieselExhP 0.00072 2.37E-07 2YrCancer[* 2.37E-07 0.00E+00 126 377716.9 3862723 9901 DieselExhP 0.00071 2.33E-07 2YrCancer[* 2.33E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863949 252 378696.3 0.00071 2.33E-07 2YrCancer[* 2.33E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 125 377692 3862723 9901 DieselExhP 0.0007 2.30E-07 2YrCancer[* 0.00E+00 253 378672.2 3863949 9901 DieselExhP 0.0007 2.30E-07 2YrCancer[* 2.30E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 254 378648.1 3863949 0.0007 2.30E-07 2YrCancer[* 2.30E-07 0.00E+00 0.0 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3863340 2.27E-07 0.00E+00 0.0 59 377994.2 9901 DieselExhP 0.00069 2.27E-07 2YrCancer[* 0.00069 2.27E-07 2YrCancer[* 3862723 2.27E-07 0.00E+00 0.0 123 377642.1 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3862723 124 377667.1 9901 DieselExhP 0.00069 2.27E-07 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 255 378624 3863949 9901 DieselExhP 0.00069 2.27E-07 2YrCancer[* 2.27E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 121 377592.2 3862723 9901 DieselExhP 0.00068 2.23E-07 2YrCancer[* 2.23E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 122 377617.2 3862723 9901 DieselExhP 0.00068 2.23E-07 2YrCancer[* 2.23E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 256 378599.9 3863949 9901 DieselExhP 0.00068 2.23E-07 2YrCancer[* 2.23E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863388 0.00068 303 377993.8 9901 DieselExhP 2.23E-07 2YrCancer[* 2.23E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 377994 3863364 9901 DieselExhP 0.00068 2.23E-07 2YrCancer[* 2.23E-07 0.00E+00 0.0 305 377969.8 3863340 9901 DieselExhP 0.00068 2.23E-07 2YrCancer[* 2.23E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 120 377567.3 0.00067 2.20E-07 2YrCancer[* 3862723 2.20E-07 0.00E+00 0.0 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 257 378575.8 3863949 9901 DieselExhP 0.00067 2.20F-07 2YrCancer[3 2.20E-07 0.00E+00 0.0 3863949 0.00067 2.20E-07 2YrCancer[* 2.20E-07 0.00E+00 0.0 258 378551.7 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 301 377993.5 3863436 9901 DieselExhP 0.00067 2.20E-07 2YrCancer[* 0.00E+00 302 377993.7 3863412 9901 DieselExhP 0.00067 2.20E-07 2YrCancer[* 2.20E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863340 2.20E-07 0.00E+00 0.0 306 377945.4 9901 DieselExhP 0.00067 2.20E-07 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 307 377921.1 3863340 9901 DieselExhP 0.00067 2.20E-07 2YrCancer[* 2.20E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 118 377517.4 3862723 9901 DieselExhP 0.00066 2.17E-07 2YrCancer[* 2.17E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3862723 0.00066 119 377542.4 9901 DieselExhP 2.17E-07 2YrCancer[2.17E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 259 378527.6 3863949 9901 DieselExhP 0.00066 2.17E-07 2YrCancer[* 2.17E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00

*HARP - HRACalc v22118 4/7/2023 9:32:13 AM - Cancer Risk - Input File: C:\Users\Desktop\Bullhead Solar\BullheadSolar HRAInput.hra RISK SUM SCENARIO DETAILS INH RISK SOIL RISK DERMAL RMMILK RISWATER RISH RISK CROP RISK BEEF RISK DAIRY RISI PIG RISK CHICKEN FEGG RISK 1ST DRIVE 2ND DRIVI PASTURE (FISH CONCWATER CONC POLABBRE' CONC 299 377993.2 3863483 2.17E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 300 377993.4 3863460 9901 DieselExhP 0.00066 2.17E-07 2YrCancer[* 2.17E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 308 377896.7 3863340 9901 DieselExhP 0.00066 2.17E-07 2YrCancer[* 2.17E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.00065 2.14E-07 2YrCancer[* 3862723 2.14E-07 0.00E+00 0.0 116 377467.5 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3862723 0.00065 2.14E-07 2YrCancer[* 2.14E-07 0.00E+00 0.0 117 377492.5 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3863949 0.00065 2.14E-07 2YrCancer[* 2.14E-07 0.00E+00 0.0 260 378503.5 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 0.00065 2.14E-07 2YrCancer[* 261 378479.4 3863949 9901 DieselExhP 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 298 377993.1 3863507 9901 DieselExhP 0.00065 2.14E-07 2YrCancer[* 2.14E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863340 0.00065 2.14E-07 2YrCancer[* 2.14E-07 0.00E+00 309 377872.4 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 310 377848 3863340 9901 DieselExhP 0.00065 2.14E-07 2YrCancer[* 2.14E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 31 379226.8 3864603 9901 DieselExhP 0.00064 2.10E-07 2YrCancer[* 2.10E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 57 378191.9 3863747 0.00064 2.10E-07 2YrCancer[* 2.10E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 115 377442.6 3862722 9901 DieselExhP 0.00064 2.10E-07 2YrCancer[* 2.10E-07 0.00E+00 0.0 262 378455.3 3863949 9901 DieselExhP 0.00064 2.10E-07 2YrCancer[* 2.10E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 296 377992.7 3863555 9901 DieselExhP 0.00064 2.10E-07 2YrCancer[* 2.10E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863531 2.10E-07 0.00E+00 0.0 297 377992.9 9901 DieselExhP 0.00064 2.10E-07 2YrCancer[311 377823.7 3863340 0.00064 2.10E-07 2YrCancer[* 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 312 377799.3 3863340 9901 DieselExhP 0.00064 2.10E-07 2YrCancer[* 0.00E+00 0.0 2 377357.5 3862548 9901 DieselExhP 0.00063 2.07E-07 2YrCancer[* 2.07E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 3864915 0.00063 2.07E-07 2YrCancer[* 2.07E-07 0.00E+00 0.0 30 379626.2 9901 DieselExhP 113 377392.7 3862722 9901 DieselExhP 0.00063 2.07E-07 2YrCancer[* 2.07E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 114 377417.7 3862722 9901 DieselExhP 0.00063 2.07E-07 2YrCancer[* 2.07E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863949 263 378431.2 0.00063 2.07E-07 2YrCancer[* 0.00E+00 9901 DieselExhP 2.07E-07 0.00E+00 0.00E+00 0.00E+00 264 378407.1 3863949 9901 DieselExhP 0.00063 2.07E-07 2YrCancer[* 0.00E+00 0.0 279 378191.5 3863792 9901 DieselExhP 0.00063 2.07E-07 2YrCancer[* 2.07E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.00063 2.07E-07 2YrCancer[* 2.07E-07 0.00E+00 0.0 280 378191.7 3863769 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 2.07E-07 0.00E+00 0.0 281 378169.6 3863747 9901 DieselExhP 0.00063 2.07E-07 2YrCancer[* 3863747 0.00063 2.07E-07 2YrCancer[* 282 378147.4 9901 DieselExhP 2.07E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 294 377992.4 3863603 0.00063 2.07E-07 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 295 377992.6 3863579 9901 DieselExhP 0.00063 2.07E-07 2YrCancer[* 2.07E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 313 377775 3863340 9901 DieselExhP 0.00063 2.07E-07 2YrCancer[* 2.07E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 111 377342.8 3862722 9901 DieselExhP 0.00062 2.04E-07 2YrCancer[* 2.04E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 112 377367.8 3862722 9901 DieselExhP 0.00062 2.04E-07 2YrCancer[* 2.04E-07 0.00E+00 3863949 2.04E-07 2YrCancer[* 378383 9901 DieselExhP 0.00062 2.04E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 265 266 378358.9 3863949 9901 DieselExhP 0.00062 2.04E-07 2YrCancer[* 2.04E-07 0.00E+00 0.0 3863814 9901 DieselExhP 0.00062 2.04E-07 0.00E+00 0.0 278 378191.3 2.04E-07 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 3863747 0.00062 2.04E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 283 378125.1 9901 DieselExhP 2.04E-07 2YrCancer[* 2.04E-07 0.00E+00 0.0 284 378102.8 3863747 9901 DieselExhP 0.00062 2.04E-07 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 0.00062 2.04E-07 2YrCancer[* 3863651 2.04E-07 0.00E+00 0.0 292 377992.1 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 293 377992.3 3863627 9901 DieselExhP 0.00062 2.04E-07 2YrCancer[* 0.00E+000.00E+00 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 314 377750.6 3863340 9901 DieselExhP 0.00062 2.04E-07 2YrCancer[* 2.04E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 315 377726.3 3863340 9901 DieselExhP 0.00062 2.04E-07 2YrCancer[* 2.04E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 17 382102.8 3861352 9901 DieselExhP 0.00061 2.00E-07 2YrCancer[* 2.00E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 377293 3862722 9901 DieselExhP 0.00061 2.00E-07 2YrCancer[* 2.00E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3862722 0.00061 2.00E-07 2YrCancer[* 110 377317.9 9901 DieselExhP 2.00E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 267 378334.8 3863949 9901 DieselExhP 0.00061 2.00E-07 2YrCancer[* 2.00E-07 0.00E+00 0.0 268 378310.7 3863949 9901 DieselExhP 0.00061 2.00E-07 2YrCancer[* 2.00E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.00061 2.00E-07 2YrCancer[* 3863859 2.00E-07 0.00E+00 0.0 276 378190.9 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 277 378191.1 3863837 9901 DieselExhP 0.00061 2.00E-07 2YrCancer[3 2.00E-07 0.00E+00 0.0 285 378080.6 3863747 0.00061 2.00E-07 2YrCancer[* 2.00E-07 0.00E+00 0.0 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 286 378058.3 3863747 9901 DieselExhP 0.00061 2.00E-07 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 291 377991.9 3863675 9901 DieselExhP 0.00061 2.00E-07 2YrCancer[* 2.00E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863340 316 377701.9 9901 DieselExhP 0.00061 2.00E-07 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 317 377677.5 3863340 9901 DieselExhP 0.00061 2.00E-07 2YrCancer[* 2.00E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 107 377243.1 3862722 9901 DieselExhP 0.0006 1.97E-07 2YrCancer[* 1.97E-07 0.00E+00 3862722 0.0006 108 377268 9901 DieselExhP 1.97E-07 2YrCancer[1.97E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 269 378286.6 3863949 9901 DieselExhP 0.0006 1.97E-07 2YrCancer[* 1.97E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00

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377653.2 9901 DieselExhP 0.0006 1.97E-07 2YrCancer[* 1.97E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 319 377628.8 3863340 9901 DieselExhP 0.0006 1.97E-07 2YrCancer[* 1.97E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 51 377193.2 0.00059 1.94E-07 2YrCancer[* 3862722 1.94E-07 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 58 377991.5 3863747 9901 DieselExhP 0.00059 1.94E-07 2YrCancer[* 1.94E-07 0.00E+00 104 377193 3862771 9901 DieselExhP 0.00059 1.94E-07 2YrCancer[* 1.94E-07 0.00E+00 105 377193.1 3862747 9901 DieselExhP 0.00059 1.94E-07 2YrCancer[* 1.94E-07 0.00E+00 106 377218.1 3862722 9901 DieselExhP 0.00059 1.94E-07 2YrCancer[* 1.94E-07 0.00E+00 271 378238.4 3863949 9901 DieselExhP 0.00059 1.94E-07 2YrCancer[* 1.94E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 272 378214.3 3863949 9901 DieselExhP 0.00059 1.94E-07 2YrCancer[* 1.94E-07 0.00E+00 1.94E-07 0.00E+00 273 378190.4 3863927 9901 DieselExhP 0.00059 1.94E-07 2YrCancer[* 274 378190.6 3863904 0.00059 1.94E-07 2YrCancer[* 1.94E-07 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 320 377604.5 3863339 9901 DieselExhP 0.00059 1.94E-07 2YrCancer[* 0.00E+00 0.0 1.94E-07 0.00E+00 0.0 321 377580.1 3863339 9901 DieselExhP 0.00059 1.94E-07 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 0.00058 1.91E-07 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 56 378190.2 3863949 9901 DieselExhP 100 377192.5 3862870 9901 DieselExhP 0.00058 1.91E-07 2YrCancer[* 1.91E-07 0.00E+00 101 377192.6 3862845 9901 DieselExhP 0.00058 1.91E-07 2YrCancer[* 1.91E-07 0.00E+00 3862821 102 377192.8 0.00058 1.91E-07 2YrCancer[* 0.00E+00 9901 DieselExhP 1.91E-07 0.00E+00 0.00E+00 0.00E+00 103 377192.9 3862796 9901 DieselExhP 0.00058 1.91E-07 2YrCancer[* 0.00E+00 0.0 322 377555.8 3863339 9901 DieselExhP 0.00058 1.91E-07 2YrCancer[* 1.91E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 323 377531.4 0.00058 1.91E-07 2YrCancer[* 1.91E-07 0.00E+00 3863339 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 1.87E-07 0.00E+00 0.0 1 377028.2 3862613 9901 DieselExhP 0.00057 1.87E-07 2YrCancer[* 3862969 96 377192.1 9901 DieselExhP 1.87E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 97 377192.2 3862944 9901 DieselExhP 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 98 377192.3 3862919 9901 DieselExhP 0.00057 1.87E-07 2YrCancer[* 1.87E-07 0.00E+00 99 377192.4 3862895 9901 DieselExhP 0.00057 1.87E-07 2YrCancer[* 1.87E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 324 377507.1 3863339 9901 DieselExhP 0.00057 1.87E-07 2YrCancer[* 1.87E-07 0.00E+00 325 377482.7 3863339 9901 DieselExhP 0.00057 1.87E-07 2YrCancer[* 1.87E-07 0.00E+00 93 377191.8 3863043 9901 DieselExhP 0.00056 1.84E-07 2YrCancer[* 1.84E-07 0.00E+00 94 377191.9 3863018 9901 DieselExhP 0.00056 1.84E-07 2YrCancer[* 1.84E-07 0.00E+00 377192 3862993 9901 DieselExhP 0.00056 1.84E-07 2YrCancer[* 1.84E-07 0.00E+00 95 0.00E+00 0.00E+00 0.00E+00 326 377458.3 3863339 0.00056 1.84E-07 2YrCancer[* 1.84E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 9901 DieselExhP 3863339 1.84E-07 0.00E+00 377434 9901 DieselExhP 0.00056 1.84E-07 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 21 382964.1 3861824 0.00055 1.81E-07 2YrCancer[* 1.81E-07 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 3863117 90 377191.4 9901 DieselExhP 0.00055 1.81E-07 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 91 377191.5 3863092 9901 DieselExhP 0.00055 1.81E-07 2YrCancer[* 1.81E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 92 377191.7 3863068 9901 DieselExhP 0.00055 1.81E-07 2YrCancer[* 1.81E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 328 377409.6 3863339 9901 DieselExhP 0.00055 1.81E-07 2YrCancer[* 1.81E-07 0.00E+00 329 377385.3 3863339 9901 DieselExhP 0.00055 1.81E-07 2YrCancer[* 1.81E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 87 377191.1 3863191 0.00054 1.77E-07 2YrCancer[* 9901 DieselExhP 1.77E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 88 377191.2 3863166 9901 DieselExhP 0.00054 1.77E-07 2YrCancer[* 1.77E-07 0.00E+00 89 377191.3 3863142 9901 DieselExhP 0.00054 1.77E-07 2YrCancer[* 1.77E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 330 377360.9 3863339 0.00054 1.77E-07 2YrCancer[* 1.77E-07 0.00E+00 0.0 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 331 377336.6 3863339 9901 DieselExhP 0.00054 1.77E-07 2YrCancer[* 1.77E-07 0.00E+00 0.0 0.00054 1.77E-07 2YrCancer[* 332 377312.2 3863339 1.77E-07 0.00E+00 9901 DieselExhP 0.00E+00 0.00E+00 0.00E+00 84 377190.8 3863265 9901 DieselExhP 0.00053 1.74E-07 2YrCancer[* 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 85 377190.9 3863240 9901 DieselExhP 0.00053 1.74E-07 2YrCancer[* 1.74E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 3863216 1.74E-07 0.00E+00 0.0 377191 9901 DieselExhP 0.00053 1.74E-07 2YrCancer[* 0.00E+00 0.00E+00 0.00E+00 333 377287.9 3863339 9901 DieselExhP 0.00053 1.74E-07 2YrCancer[* 1.74E-07 0.00E+00 334 377263.5 3863339 9901 DieselExhP 0.00053 1.74E-07 2YrCancer[* 1.74E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 335 377239.2 3863339 0.00053 9901 DieselExhP 1.74E-07 2YrCancer[1.74E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 50 377190.4 3863339 9901 DieselExhP 0.00052 1.71E-07 2YrCancer[* 1.71E-07 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00

Appendix C: Air Dispersion Modeling and Health Risk Assessment

INDEX	GRP1	GRP2	POLID	POLABBRE ¹ (CONC	RISK_SUM SCENARIO DETAILS	INH_RISK	SOIL_RISK	DERMAL_R	MMILK_RIS	WATER_RI!	FISH_RISK	CROP_RISK	BEEF_RISK	DAIRY_RISI PIG_R	ISK CHICKEN	_FEGG_RISK 1	ST_DRIVE 2ND	_DRIVI PASTURE_(FISH	1_CON(WATER_CON	С
	82 377190.6	3863315	99	01 DieselExhP	0.00052	1.71E-07 2YrCancer[*	1.71E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00 0.00I	E+00 0.00E+0	0.00E+00 IN	IHALATION	0.00E+00 0.0	0.00E+00 0.00E+00	
	83 377190.7	3863290) 99	01 DieselExhP	0.00052	1.71E-07 2YrCancer[*	1.71E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00 0.00I	E+00 0.00E+0	0.00E+00 IN	IHALATION	0.00E+00 0.0	0.00E+00 0.00E+00	
	336 377214.8	3863339	99	01 DieselExhP	0.00052	1.71E-07 2YrCancer[*	1.71E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00 0.00I	E+00 0.00E+0	0.00E+00 IN	IHALATION	0.00E+00 0.0	0.00E+00 0.00E+00	
	19 381965.4	3860758	99	01 DieselExhP	0.00043	1.41E-07 2YrCancer[*	1.41E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00 0.00I	E+00 0.00E+0	0.00E+00 IN	IHALATION	0.00E+00 0.0	0.00E+00 0.00E+00	
	20 382065.3	3860829	99	01 DieselExhP	0.00037	1.22E-07 2YrCancer[*	1.22E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00 0.00I	E+00 0.00E+0	0.00E+00 IN	IHALATION	0.00E+00 0.0	0.00E+00 0.00E+00	
	18 381446.8	3860816	99	01 DieselExhP	0.00036	1.18F-07 2YrCancer[*	1.18F-07	0.00E+00	0.00F+00	0.00F+00	0.00E+00	0.00F+00	0.00E+00	0.00E+00	0.00E+00 0.00I	E+00 0.00E+0	0.00E+00 IN	IHALATION	0.00F+00 0.0	0.00F+00 0.00F+00	

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	OLID POLABBRE' CONC SCENARIO CV CNS IMMUN KIDNEY GILV REPRO/DE' RESP		INH_CONC SOIL_DOSE DERMAL_E MMILK_DC WATER_DC FISH_DOSE CROP_DOS BEEF_DOSI DAIRY_DO: PIG_DOSE CHICKEN_EEGG_DOSE 1ST_DRIVE 2ND_DRIVI 3RD	
71 382015.2 3863333	9901 DieselExhP		1.90E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
67 380406.2 3863549	9901 DieselExhP		1.87E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
65 381224.4 3863936 524 380381.7 3863548	9901 DieselExhP		1.86E-02 0.00E+00 INHALATION 1.78E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
477 381199.5 3863937	9901 DieselExhP		1.77E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
708 382038.7 3863332	9901 DieselExhP		1.76E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
707 382015.2 3863309	9901 DieselExhP		1.74E-02 0.00E+00 0.0	0.00E+00
73 382418.5 3863525	9901 DieselExhP	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.71E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
476 381224.5 3863961	9901 DieselExhP	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.69E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
523 380405.9 3863573	9901 DieselExhP	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.69E-02 0.00E+00	0.00E+00 0.00E+00 0.00E+00
478 381174.6 3863937	9901 DieselExhP	* 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.68E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
525 380357.3 3863548	9901 DieselExhP		1.68E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
709 382062.2 3863331	9901 DieselExhP		1.67E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
78 382817.8 3863521 74 382571.2 3863517	9901 DieselExhP		1.64E-02 0.00E+00 INHALATION 1.64E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
74 382371.2 3863317	9901 DieselExhP		1.63E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
526 380332.8 3863548	9901 DieselExhP		1.63E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
81 382027 3864328	9901 DieselExhP		1.62E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
479 381149.7 3863937	9901 DieselExhP	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.62E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
728 382440.3 3863524	9901 DieselExhP	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.62E-02 0.00E+00	0.00E+00 0.00E+00 0.00E+00
475 381224.6 3863986	9901 DieselExhP	* 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.60E-02 0.00E+00	0.00E+00 0.00E+00 0.00E+00
727 382406.4 3863505	9901 DieselExhP		1.58E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
527 380308.4 3863547	9901 DieselExhP		1.58E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
943 382051.9 3864328 710 382085.7 3863330	9901 DieselExhP		1.58E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
480 381124.7 3863937	9901 DieselExhP		1.57E-02 0.00E+00 INHALATION 1.57E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
733 382549.4 3863519	9901 DieselExhP		1.57E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
705 382015.2 3863260	9901 DieselExhP		1.57E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
729 382462.1 3863523	9901 DieselExhP		1.56E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
522 380405.7 3863598	9901 DieselExhP	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.56E-02 0.00E+00	0.00E+00 0.00E+00 0.00E+00
528 380284 3863547	9901 DieselExhP		1.53E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
481 381099.8 3863938	9901 DieselExhP		1.53E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
474 381224.6 3864010	9901 DieselExhP		1.53E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
732 382527.6 3863520 752 382842.7 3863521	9901 DieselExhP		1.53E-02 0.00E+00 INHALATION 1.53E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
730 382483.9 3863522	9901 DieselExhP		1.53E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
942 382076.8 3864327	9901 DieselExhP		1.53E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
704 382015.2 3863235	9901 DieselExhP	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
731 382505.7 3863521	9901 DieselExhP	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
711 382109.2 3863329	9901 DieselExhP	* 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.51E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
944 382027 3864352	9901 DieselExhP		1.51E-02 0.00E+00 INHALATION	0.00E+00
734 382560.4 3863497	9901 DieselExhP		1.50E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
482 381074.9 3863938 726 382394.2 3863485	9901 DieselExhP		1.50E-02 0.00E+00 INHALATION 1.50E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
941 382101.7 3864327	9901 DieselExhP		1.49E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
529 380259.5 3863547	9901 DieselExhP		1.48E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
473 381224.7 3864035	9901 DieselExhP	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.48E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
703 382015.2 3863210	9901 DieselExhP	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.48E-02 0.00E+00	0.00E+00 0.00E+00 0.00E+00
751 382818.6 3863500	9901 DieselExhP	* 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.48E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
521 380405.4 3863623	9901 DieselExhP		1.47E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
530 380235.1 3863546	9901 DieselExhP		1.47E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
483 381050 3863938 940 382126.6 3864327	9901 DieselExhP		1.47E-02 0.00E+00 INHALATION 1.47E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
712 382132.7 3863329	9901 DieselExhP		1.46E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
939 382151.5 3864326	9901 DieselExhP		1.45E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
702 382015.2 3863186	9901 DieselExhP	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.45E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
753 382867.6 3863520	9901 DieselExhP	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 0.00E+00
484 381025.1 3863938	9901 DieselExhP		1.45E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
945 382027 3864377	9901 DieselExhP		1.44E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
531 380210.6 3863546 472 381224.8 3864059	9901 DieselExhP		1.44E-02 0.00E+00 INHALATION 1.44E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
725 382382.1 3863464	9901 DieselexhP		1.44E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
938 382176.4 3864326	9901 DieselExhP		1.43E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
485 381000.2 3863938	9901 DieselExhP	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 0.00E+00
532 380186.2 3863546	9901 DieselExhP		1.42E-02 0.00E+00	0.00E+00 0.00E+00 0.00E+00
701 382015.2 3863161	9901 DieselExhP		1.42E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
937 382201.3 3864326	9901 DieselExhP		1.42E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
713 382156.2 3863328 471 381224.9 3864084	9901 DieselexhP		1.41E-02 0.00E+00 INHALATION 1.41E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
520 380405.2 3863648	9901 DieselExhP		1.41E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
946 382027 3864401	9901 DieselExhP		1.41E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
486 380975.3 3863939	9901 DieselExhP	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
735 382549.7 3863476	9901 DieselExhP		1.41E-02 0.00E+00 0.0	0.00E+00
936 382226.2 3864326	9901 DieselExhP		1.40E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
754 382892.5 3863520	9901 DieselExhP		1.40E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
935 382251.1 3864325 487 380950.4 3863939	9901 DieselExhP		1.39E-02 0.00E+00 INHALATION 1.39E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
700 382015.2 3863137	9901 DieselexhP		1.39E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
724 382369.9 3863444	9901 DieselExhP		1.39E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
470 381225 3864109	9901 DieselExhP 0.01387 NonCancer 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.77E-0.		1.39E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
534 380137.3 3863545	9901 DieselExhP		1.39E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
947 382027 3864426	9901 DieselExhP		1.38E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
533 380161.8 3863545	9901 DieselExhP		1.38E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
934 382276 3864325	9901 DieselExhP		1.38E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
488 380925.4 3863939 933 382300.9 3864325	9901 DieselExhP		1.38E-02 0.00E+00 INHALATION 1.37E-02 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
714 382179.7 3863327	9901 DieselexhP		1.37E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
535 380112.9 3863544	9901 DieselExhP		1.37E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
469 381225 3864133	9901 DieselExhP 0.01368 NonCancer 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.74E-0.		1.37E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
699 382015.2 3863112	9901 DieselExhP		1.37E-02 0.00E+00	0.00E+00 0.00E+00 0.00E+00
755 382917.3 3863520	9901 DieselExhP		1.37E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
948 382027 3864451	9901 DieselExhP	* U.UUE+00 U.UUE+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.37E-02 0.00E+00 1.00E+00 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00

• •	9:32:13 AM - Chronic Risk - Input File: C:\User	, , , , ,	<u> </u>	CIVIN EVE BONE/T	FFIENDO DIOOD ODOD	CENEDAL DETAILS	THE CONC. COLL DOCEDERMAL FAMALIES DESIGNED DOCEDED DOCUMENT DOCUMENT DOCEDED	WEN LEGG DOCEACT DRIVE AND DRIVING DRIV	AVERACTURE AFICIL CONVANATER CONC
INDEX GRP1 GRP2 PC 932 382325.8 3864324	OLID POLABBRE CONC SCENARIO C 9901 DieselExhP 0.01364 NonCancer (KIDNEY GILV REPRO/DE\RESP 0.00E+00 0.00E+00 0.00E+00 2.73E-03	•	EETENDO BLOOD ODOR 00 0.00E+00 0.00E+00 0.00E+0		INH_CONC SOIL_DOSE DERMAL_E MMILK_DC WATER_DC FISH_DOSE CROP_DOS BEEF_DOSI DAIRY_DO: PIG_DOSE CHIC 1.36E-02 0.00E+00 0.0		0.00E+00
489 380900.5 3863939			0.00E+00 0.00E+00 0.00E+00 2.73E-03				1.36E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00
519 380404.9 3863672	9901 DieselExhP 0.01363 NonCancer (0.00E+00	0.00E+00 0.00E+00 0.00E+00 2.73E-03	0.00E+00 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+0	0 0.00E+00 *	1.36E-02 0.00E+00	JE+00 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
931 382350.7 3864324			0.00E+00				1.36E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00
536 380088.5 3863544 949 382027 3864475			0.00E+00 0.00E+00 0.00E+00 2.71E-03 0.00E+00 0.00E+00 0.00E+00 2.71E-03				1.35E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
723 382357.8 3863423			0.00E+00 0.00E+00 0.00E+00 2.71E-03				1.35E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
930 382375.6 3864324			0.00E+00 0.00E+00 0.00E+00 2.70E-03				1.35E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
468 381225.1 3864158	9901 DieselExhP 0.0135 NonCancer (0.00E+00	0.00E+00 0.00E+00 0.00E+00 2.70E-03	0.00E+00 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+0	0 0.00E+00 *	1.35E-02 0.00E+00	JE+00 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
490 380875.6 3863940			0.00E+00				1.35E-02 0.00E+00 0.00E+		0.00E+00
756 382942.2 3863519			0.00E+00 0.00E+00 0.00E+00 2.69E-03				1.35E-02 0.00E+00 0.0		0.00E+00
698 382015.2 3863088 929 382400.5 3864324			0.00E+00 0.00E+00 0.00E+00 2.69E-03 0.00E+00 0.00E+00 0.00E+00 2.69E-03				1.35E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
950 382027 3864500			0.00E+00 0.00E+00 0.00E+00 2.68E-03				1.34E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00
928 382425.4 3864323	9901 DieselExhP 0.01339 NonCancer (0.00E+00	0.00E+00 0.00E+00 0.00E+00 2.68E-03	0.00E+00 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+0	0 0.00E+00 *	1.34E-02 0.00E+00	JE+00 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
467 381225.2 3864182	9901 DieselExhP 0.01334 NonCancer (0.00E+00	0.00E+00 0.00E+00 0.00E+00 2.67E-03	0.00E+00 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+0	0 0.00E+00 *	1.33E-02 0.00E+00		0.00E+00 0.00E+00 0.00E+00
491 380850.7 3863940			0.00E+00				1.33E-02 0.00E+00 0.00E+		0.00E+00 0.00E+00 0.00E+00
927 382450.3 3864323 750 382819.4 3863479			0.00E+00 0.00E+00 0.00E+00 2.67E-03 0.00E+00 0.00E+00 0.00E+00 2.67E-03				1.33E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
757 382967.1 3863519			0.00E+00 0.00E+00 0.00E+00 2.67E-03				1.33E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00
951 382027 3864524	9901 DieselExhP 0.01333 NonCancer (0.00E+00	0.00E+00 0.00E+00 0.00E+00 2.67E-03	0.00E+00 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+0	0 0.00E+00 *	1.33E-02 0.00E+00	JE+00 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
926 382475.2 3864323	9901 DieselExhP 0.01329 NonCancer (0.00E+00	0.00E+00 0.00E+00 0.00E+00 2.66E-03	0.00E+00 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+0	0 0.00E+00 *	1.33E-02 0.00E+00 0.0	JE+00 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
952 382027 3864549			0.00E+00				1.33E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00
715 382203.2 3863326 697 382015.2 3863063			0.00E+00 0.00E+00 0.00E+00 2.65E-03 0.00E+00 0.00E+00 0.00E+00 2.65E-03				1.33E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
538 380039.6 3863543			0.00E+00 0.00E+00 0.00E+00 2.65E-03				1.32E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00
925 382500.1 3864322	9901 DieselExhP 0.01324 NonCancer (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 0.00E+00 *	1.32E-02 0.00E+00	JE+00 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
518 380404.7 3863697			0.00E+00 0.00E+00 0.00E+00 2.65E-03				1.32E-02 0.00E+00 0.00E+		0.00E+00
758 382992 3863518			0.00E+00				1.32E-02 0.00E+00 0.0		0.00E+00
961 382027 3864770 537 380064 3863544			0.00E+00 0.00E+00 0.00E+00 2.64E-03 0.00E+00 0.00E+00 0.00E+00 2.64E-03				1.32E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
953 382027 3864573	***************************************		0.00E+00 0.00E+00 0.00E+00 2.64E-03				1.32E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00
466 381225.3 3864207	9901 DieselExhP 0.0132 NonCancer (0.00E+00	0.00E+00 0.00E+00 0.00E+00 2.64E-03	0.00E+00 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+0	0 0.00E+00 *	1.32E-02 0.00E+00	DE+00 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
492 380825.8 3863940	9901 DieselExhP 0.0132 NonCancer (0.00E+00	0.00E+00 0.00E+00 0.00E+00 2.64E-03	0.00E+00 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+0	0 0.00E+00 *	1.32E-02 0.00E+00	JE+00 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
736 382538.9 3863456			0.00E+00				1.32E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00
959 382027 3864721 962 382027 3864794	***************************************		0.00E+00 0.00E+00 0.00E+00 2.64E-03 0.00E+00 0.00E+00 0.00E+00 2.64E-03				1.32E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
924 382525.1 3864322			0.00E+00 0.00E+00 0.00E+00 2.64E-03				1.32E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00
954 382027 3864598	9901 DieselExhP 0.01318 NonCancer (0.00E+00	0.00E+00 0.00E+00 0.00E+00 2.64E-03	0.00E+00 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+0	0 0.00E+00 *	1.32E-02 0.00E+00 0.0	JE+00 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
955 382027 3864623			0.00E+00 0.00E+00 0.00E+00 2.64E-03				1.32E-02 0.00E+00		0.00E+00 0.00E+00 0.00E+00
958 382027 3864696 960 382027 3864745			0.00E+00 0.00E+00 0.00E+00 2.63E-03 0.00E+00 0.00E+00 0.00E+00 2.63E-03				1.32E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
960 382027 3864745 964 382027 3864844			0.00E+00 0.00E+00 0.00E+00 2.63E-03				1.32E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
956 382027 3864647			0.00E+00 0.00E+00 0.00E+00 2.63E-03				1.32E-02 0.00E+00 0.0		0.00E+00
963 382027 3864819	9901 DieselExhP 0.01316 NonCancer (0.00E+00	0.00E+00 0.00E+00 0.00E+00 2.63E-03	0.00E+00 0.00E+00 0.00E+	0.00E+00 0.00E+00 0.00E+0	0 0.00E+00 *	1.32E-02 0.00E+00	JE+00 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
967 382027 3864917	***************************************		0.00E+00 0.00E+00 0.00E+00 2.63E-03				1.32E-02 0.00E+00		0.00E+00 0.00E+00 0.00E+00
965 382027 3864868			0.00E+00				1.32E-02 0.00E+00 0.00E+		0.00E+00
541 379966.3 3863542 759 383016.8 3863518			0.00E+00 0.00E+00 0.00E+00 2.63E-03 0.00E+00 0.00E+00 0.00E+00 2.63E-03				1.31E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
923 382550 3864322			0.00E+00 0.00E+00 0.00E+00 2.63E-03				1.31E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00
957 382027 3864672			0.00E+00 0.00E+00 0.00E+00 2.63E-03				1.31E-02 0.00E+00	JE+00 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
966 382027 3864893			0.00E+00 0.00E+00 0.00E+00 2.63E-03				1.31E-02 0.00E+00		0.00E+00 0.00E+00 0.00E+00
722 382345.7 3863403 968 382027 3864942			0.00E+00 0.00E+00 0.00E+00 2.62E-03 0.00E+00 0.00E+00 0.00E+00 2.62E-03				1.31E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
539 380015.1 3863543			0.00E+00 0.00E+00 0.00E+00 2.62E-03				1.31E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00
465 381225.4 3864232			0.00E+00 0.00E+00 0.00E+00 2.62E-03				1.31E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
922 382574.9 3864322	9901 DieselExhP 0.01309 NonCancer (0.00E+00	0.00E+00 0.00E+00 0.00E+00 2.62E-03	0.00E+00 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+0	0 0.00E+00 *	1.31E-02 0.00E+00	JE+00 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
696 382015.2 3863038			0.00E+00				1.31E-02 0.00E+00 0.0		0.00E+00
760 383041.7 3863518 969 382027 3864966			0.00E+00 0.00E+00 0.00E+00 2.61E-03 0.00E+00 0.00E+00 0.00E+00 2.61E-03				1.31E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
493 380800.9 3863940			0.00E+00 0.00E+00 0.00E+00 2.61E-03				1.30E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00
921 382599.8 3864321			0.00E+00 0.00E+00 0.00E+00 2.61E-03				1.30E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
540 379990.7 3863543	9901 DieselExhP 0.01301 NonCancer (0.00E+00	0.00E+00 0.00E+00 0.00E+00 2.60E-03	0.00E+00 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+0	0 0.00E+00 *	1.30E-02 0.00E+00	JE+00 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
761 383066.6 3863517			0.00E+00				1.30E-02 0.00E+00 0.0		0.00E+00
920 382624.7 3864321 464 381225.4 3864256			0.00E+00 0.00E+00 0.00E+00 2.60E-03 0.00E+00 0.00E+00 0.00E+00 2.59E-03				1.30E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
494 380776 3863941			0.00E+00 0.00E+00 0.00E+00 2.59E-03				1.30E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00
919 382649.6 3864321			0.00E+00 0.00E+00 0.00E+00 2.59E-03				1.29E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
970 382027 3864991			0.00E+00 0.00E+00 0.00E+00 2.59E-03				1.29E-02 0.00E+00	JE+00 0.00E+00 INHALATION	0.00E+00
762 383091.5 3863517			0.00E+00 0.00E+00 0.00E+00 2.58E-03				1.29E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00
918 382674.5 3864320 763 383116.3 3863516			0.00E+00 0.00E+00 0.00E+00 2.58E-03 0.00E+00 0.00E+00 0.00E+00 2.58E-03				1.29E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
917 382699.4 3864320			0.00E+00 0.00E+00 0.00E+00 2.58E-03				1.29E-02 0.00E+00 0.0		0.00E+00
517 380404.5 3863722	9901 DieselExhP 0.01287 NonCancer (0.00E+00	0.00E+00 0.00E+00 0.00E+00 2.57E-03	0.00E+00 0.00E+00 0.00E+	0.00E+00 0.00E+00 0.00E+0	0 0.00E+00 *	1.29E-02 0.00E+00	JE+00 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
916 382724.3 3864320			0.00E+00 0.00E+00 0.00E+00 2.57E-03				1.29E-02 0.00E+00		0.00E+00 0.00E+00 0.00E+00
463 381225.5 3864281			0.00E+00 0.00E+00 0.00E+00 2.57E-03				1.29E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00
495 380751 3863941 695 382015.2 3863014			0.00E+00 0.00E+00 0.00E+00 2.57E-03 0.00E+00 0.00E+00 0.00E+00 2.57E-03				1.28E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
971 382027 3865015			0.00E+00 0.00E+00 0.00E+00 2.57E-03				1.28E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00
915 382749.2 3864320			0.00E+00 0.00E+00 0.00E+00 2.56E-03				1.28E-02 0.00E+00		0.00E+00 0.00E+00 0.00E+00
542 379941.8 3863542			0.00E+00				1.28E-02 0.00E+00 0.00E+		0.00E+00
764 383141.2 3863516			0.00E+00 0.00E+00 0.00E+00 2.56E-03				1.28E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00
462 381225.6 3864305 716 382226.7 3863325			0.00E+00 0.00E+00 0.00E+00 2.56E-03 0.00E+00 0.00E+00 0.00E+00 2.56E-03				1.28E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
914 382774.1 3864319			0.00E+00 0.00E+00 0.00E+00 2.56E-03				1.28E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00
913 382799 3864319			0.00E+00 0.00E+00 0.00E+00 2.55E-03				1.27E-02 0.00E+00	JE+00 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
765 383166.1 3863515			0.00E+00				1.27E-02 0.00E+00 0.00E+		0.00E+00
461 381225.7 3864330 912 382823.9 3864319			0.00E+00 0.00E+00 0.00E+00 2.54E-03 0.00E+00 0.00E+00 0.00E+00 2.54E-03				1.27E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
460 381225.8 3864355			0.00E+00 0.00E+00 0.00E+00 2.54E-03 0.00E+00 0.00E+00 0.00E+00 2.54E-03				1.27E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
496 380726.1 3863941			0.00E+00 0.00E+00 0.00E+00 2.54E-03				1.27E-02 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00
721 382333.5 3863383	9901 DieselExhP 0.01268 NonCancer (0.00E+00	0.00E+00 0.00E+00 0.00E+00 2.54E-03	0.00E+00 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+0	0 0.00E+00 *	1.27E-02 0.00E+00	JE+00 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00

• •	9:32:13 AM - Chronic Risk - Input File: C:\Users\34236\Desktop\B DLID POLABBRE' CONC SCENARIO CV CNS		′E BONE/TEE1ENDO BLOOD ODOR GENERAL DE	TAILS INH CONC SOIL DOSE DERMAL EMMILK DEWATER DEFISH DOSE CROP DOS BEEF DOSEDAIRY DOEPIG I	OSE CHICKEN LEGG DOSE1ST DRIVE 2ND DRIVLARD DRIVLEDASTURE LEISH CONCWATE	FR CONC
766 383191 3863515		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.53E-03 0.00E+00	•	1.27E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00	DE+00
911 382848.8 3864318 910 382873.7 3864318		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.53E-03 0.00E+00 0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.53E-03 0.00E+00		1.27E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.27E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
459 381225.8 3864379		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.53E-03 0.00E+00		1.26E-02 0.00E+00 0.0	+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00	0E+00
543 379917.4 3863542 694 382015.2 3862989		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.53E-03 0.00E+00 0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.52E-03 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 0.00E+00 0.00E 1.26E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
909 382898.6 3864318	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.52E-03 0.00E+00	0.00E+00	1.26E-02 0.00E+00 0.0	+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00	0E+00
767 383215.8 3863515 458 381225.9 3864404		0 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 2.52E-03 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 0.00E+00 0.00E 1.26E-02 0.00E+00 0.00E		
908 382923.5 3864318		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.52E-03 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 0.00E+00 0.00E+00	+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00	0E+00
972 382027 3865040 457 381226 3864428		0 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 2.51E-03 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 0.00E+00 0.00E 1.26E-02 0.00E+00 0.00E		
907 382948.4 3864317		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.51E-03 0.00E+00		1.26E-02 0.00E+00 0.0		
497 380701.2 3863941 516 380404.2 3863746		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.51E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.51E-03 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 0.00E+00 0.00E 1.26E-02 0.00E+00 0.00E		
906 382973.3 3864317		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.51E-03 0.00E+00		1.26E-02 0.00E+00 0.0		
768 383240.7 3863514 545 379868.5 3863541		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.51E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.51E-03 0.00E+00		1.25E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.25E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
905 382998.2 3864317		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.50E-03 0.00E+00		1.25E-02 0.00E+00 0.0	+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00	0E+00
456 381226.1 3864453 544 379892.9 3863541		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.50E-03 0.00E+00 0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.50E-03 0.00E+00		1.25E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.25E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
904 383023.1 3864317	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.50E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.25E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E	+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00	0E+00
455 381226.2 3864478 769 383265.6 3863514		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.50E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.50E-03 0.00E+00		1.25E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.25E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
454 381226.2 3864502	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.49E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.25E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00	0E+00
903 383048 3864316 453 381226.3 3864527		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.49E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.49E-03 0.00E+00		1.25E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.24E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
498 380676.3 3863942	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.49E-03 0.00E+00	0.00E+00	1.24E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00	0E+00
770 383290.5 3863513 902 383072.9 3864316		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.48E-03 0.00E+00 0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.48E-03 0.00E+00		1.24E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.24E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
693 382015.2 3862965	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.48E-03 0.00E+00	0.00E+00	1.24E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00	0E+00
901 383097.8 3864316 771 383315.3 3863513		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.48E-03 0.00E+00 0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.47E-03 0.00E+00		1.24E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.24E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
452 381226.4 3864552	9901 DieselExhP	0 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 *	1.24E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00	0E+00
900 383122.7 3864315 451 381226.5 3864576		0 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 2.47E-03 0.00E+00		1.23E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.23E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
772 383340.2 3863512	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.46E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.23E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00	0E+00
899 383147.6 3864315 449 381226.6 3864625		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.46E-03 0.00E+00 0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.46E-03 0.00E+00		1.23E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.23E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
499 380651.4 3863942	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.46E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.23E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00	0E+00
448 381226.7 3864650 773 383365.1 3863512		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.46E-03 0.00E+00 0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.46E-03 0.00E+00		1.23E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.23E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
447 381226.8 3864675		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.45E-03 0.00E+00		1.23E-02 0.00E+00 0.00E+	+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00	0E+00
450 381226.6 3864601 898 383172.5 3864315		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.45E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.45E-03 0.00E+00		1.23E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.23E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
446 381226.9 3864699		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.45E-03 0.00E+00		1.22E-02 0.00E+00 0.00E+		
774 383390 3863512 897 383197.4 3864315		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.45E-03 0.00E+00 0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.45E-03 0.00E+00		1.22E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.22E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
445 381227 3864724		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.45E-03 0.00E+00		1.22E-02 0.00E+00 0.00E+	+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00	0E+00
515 380404 3863771 973 382027 3865065		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.45E-03 0.00E+00 0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.44E-03 0.00E+00		1.22E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.22E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
775 383414.8 3863511		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.44E-03 0.00E+00		1.22E-02 0.00E+00 0.00E+		
444 381227 3864748 896 383222.3 3864314		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.44E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.44E-03 0.00E+00		1.22E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.22E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
443 381227.1 3864773		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.44E-03 0.00E+00		1.22E-02 0.00E+00 0.00E+		
75 382528.1 3863435 692 382015.2 3862940		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.44E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.44E-03 0.00E+00		1.22E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.22E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
546 379844.1 3863541		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.43E-03 0.00E+00		1.22E-02 0.00E+00 0.0		
776 383439.7 3863511 717 382250.1 3863324		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.43E-03 0.00E+00 0 0.00E+00 0.00E+00 0.00E+00 2.43E-03 0.00E+00		1.22E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.22E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
895 383247.2 3864314 500 380626.5 3863942		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.43E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.43E-03 0.00E+00		1.22E-02 0.00E+00 0.0		
720 382321.4 3863362		0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.43E-03 0.00E+00 0.0		1.21E-02 0.00E+00 0.0		
777 383464.6 3863510 894 383272.1 3864314		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.43E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.42E-03 0.00E+00		1.21E-02 0.00E+00 0.0		
442 381227.2 3864798		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.42E-03 0.00E+00 0.00E+00		1.21E-02 0.00E+00 0.0		
749 382820.2 3863458 778 383489.5 3863510		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.42E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.42E-03 0.00E+00		1.21E-02 0.00E+00 0.0		
893 383297 3864313		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.42E-03 0.00E+00		1.21E-02 0.00E+00 0.0		
892 383321.9 3864313 779 383514.4 3863510		0 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 2.41E-03 0.00E+00		1.21E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.21E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
891 383346.8 3864313		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.41E-03 0.00E+00		1.20E-02 0.00E+00 0.0		
548 379795.2 3863540 407 381777.4 3865139		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.40E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.40E-03 0.00E+00		1.20E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.20E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
408 381752.5 3865140		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.40E-03 0.00E+00		1.20E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E	+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00	0E+00
547 379819.6 3863540 890 383371.8 3864313		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.40E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.40E-03 0.00E+00		1.20E-02 0.00E+00 0.0		
406 381802.4 3865139	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.40E-03 0.00E+00	0.00E+00	1.20E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E	+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00	0E+00
780 383539.2 3863509 889 383396.7 3864312		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.40E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.40E-03 0.00E+00		1.20E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.20E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
409 381727.5 3865140	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.40E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.20E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E	+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00	0E+00
888 383421.6 3864312 405 381827.3 3865139		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.39E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.39E-03 0.00E+00		1.20E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.20E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
441 381227.3 3864822	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.39E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.20E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00	0E+00
887 383446.5 3864312 410 381702.5 3865140		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.39E-03 0.00E+00 0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.39E-03 0.00E+00		1.20E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.19E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
781 383564.1 3863509	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.39E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.19E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E	+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00	0E+00
501 380601.6 3863942 691 382015.2 3862915		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.39E-03 0.00E+00 0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.39E-03 0.00E+00		1.19E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.19E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		
886 383471.4 3864311	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.38E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.19E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E	+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00	0E+00
782 383589 3863508 404 381852.3 3865139		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.38E-03 0.00E+00 0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.38E-03 0.00E+00		1.19E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E 1.19E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		

<i>, ,</i>	9:32:13 AM - Chronic Risk - Input File: C:\User	, , , , ,	- '	CVIN EVE DONE		OFNERAL RETAILS		VATER RATION ROOF CROP RO	OCRESS ROCKENING ROCKE		
INDEX GRP1 GRP2 PC 411 381677.6 3865140	OLID POLABBRE CONC SCENARIO C\ 9901 DieselExhP 0.01189 NonCancer 0		•	•	EETENDO BLOOD ODOR -00 0.00F+00 0.00F+00 0.00F+1	GENERAL DETAILS	. INH_CONC SOIL_DOSE DERMAL_L MMILK_DC W. 1.19E-02				2ND_DRIVI3RD_DRIVIPASTURE_(FISH_CON(WATER_CONC 0N
514 380403.7 3863796	9901 DieselExhP 0.01189 NonCancer 0						1.19E-02 0.00E+00 0.00E+00 0.00E+00 0				
740 382628.6 3863416	9901 DieselExhP 0.01189 NonCancer 0	0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+0	00 0.00E+00 *	1.19E-02	0.00E+00	0 0.00E+00 0.00E+00 0.	00E+00 0.00E+00 0.00E+00 INHALATIC	
885 383496.3 3864311	9901 DieselExhP 0.01189 NonCancer 0						1.19E-02 0.00E+00 0.00E+00 0.00E+00 0				
635 380791 3862725 634 380766.1 3862725	9901 DieselExhP 0.01188 NonCancer C 9901 DieselExhP 0.01187 NonCancer C						1.19E-02				
636 380816 3862725	9901 DieselExhP 0.01187 NonCancer 0						1.19E-02 0.00E+00 0.00E+00 0.00E+00 0				
884 383521.2 3864311	9901 DieselExhP 0.01187 NonCancer 0	0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+	·00 0.00E+00 0.00E+00 0.00E+	00 0.00E+00 *	1.19E-02	0.00E+00	0 0.00E+00 0.00E+00 0.	00E+00 0.00E+00 0.00E+00 INHALATIC	ON 0.00E+00 0.00E+00 0.00E+00
631 380691.1 3862725	9901 DieselExhP 0.01186 NonCancer 0						1.19E-02				
632 380716.1 3862725	9901 DieselExhP 0.01186 NonCancer 0						1.19E-02				
633 380741.1 3862725 637 380841 3862724	9901 DieselExhP 0.01186 NonCancer 0 9901 DieselExhP 0.01186 NonCancer 0						1.19E-02				
638 380866 3862724	9901 DieselExhP 0.01186 NonCancer 0						1.19E-02 0.00E+00 0.00E+00 0.00E+00 0				
739 382604.5 3863416	9901 DieselExhP 0.01186 NonCancer 0	0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+	·00 0.00E+00 0.00E+00 0.00E+	00 0.00E+00 *	1.19E-02	0.00E+00	0 0.00E+00 0.00E+00 0.	00E+00 0.00E+00 0.00E+00 INHALATIC	0.00E+00 0.00E+00 0.00E+00
741 382652.7 3863416	9901 DieselExhP 0.01186 NonCancer 0						1.19E-02 0.00E+00 0.00E+00 0.00E+00 0				
629 380641.1 3862725 630 380666.1 3862725	9901 DieselExhP 0.01185 NonCancer 0 9901 DieselExhP 0.01185 NonCancer 0						1.19E-02				
639 380891 3862724	9901 DieselExhP 0.01185 NonCancer 0						1.19E-02 0.00E+00 0.00E+00 0.00E+00 0				
783 383613.9 3863508	9901 DieselExhP 0.01185 NonCancer 0	0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+	·00 0.00E+00 0.00E+00 0.00E+	00 0.00E+00 *	1.19E-02	0.00E+00	0 0.00E+00 0.00E+00 0.	00E+00 0.00E+00 0.00E+00 INHALATIC	ON 0.00E+00 0.00E+00 0.00E+00
412 381652.6 3865140	9901 DieselExhP 0.01184 NonCancer 0						1.18E-02 0.00E+00 0.00E+00 0.00E+00 0				
627 380591.2 3862726 628 380616.2 3862726	9901 DieselExhP 0.01184 NonCancer C 9901 DieselExhP 0.01184 NonCancer C						1.18E-02				
640 380916 3862724	9901 DieselExhP 0.01184 NonCancer 0						1.18E-02 0.00E+00 0.00E+00 0.00E+00 0				
883 383546.1 3864311	9901 DieselExhP 0.01184 NonCancer 0	0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+	·00 0.00E+00 0.00E+00 0.00E+	00 0.00E+00 *	1.18E-02	0.00E+00	0 0.00E+00 0.00E+00 0.	00E+00 0.00E+00 0.00E+00 INHALATIC	ON 0.00E+00 0.00E+00 0.00E+00
625 380541.2 3862726	9901 DieselExhP 0.01183 NonCancer 0						1.18E-02				
626 380566.2 3862726	9901 DieselExhP 0.01183 NonCancer 0						1.18E-02 0.00E+00 0.00E+00 0.00E+00 0				
641 380940.9 3862724 549 379770.7 3863539	9901 DieselExhP 0.01183 NonCancer C 9901 DieselExhP 0.01182 NonCancer C						1.18E-02				
882 383571 3864310	9901 DieselExhP 0.01182 NonCancer 0						1.18E-02 0.00E+00 0.00E+00 0.00E+00 0				
642 380965.9 3862724	9901 DieselExhP 0.01181 NonCancer 0	0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+	00 0.00E+00 *	1.18E-02	0.00E+00	0 0.00E+00 0.00E+00 0.	00E+00 0.00E+00 0.00E+00 INHALATIC	0.00E+00 0.00E+00 0.00E+00
403 381877.2 3865139	9901 DieselExhP 0.0118 NonCancer 0						1.18E-02 0.00E+00 0.00E+00 0.00E+00 0				
624 380516.2 3862726 643 380990.9 3862724	9901 DieselExhP 0.0118 NonCancer 0 9901 DieselExhP 0.0118 NonCancer 0		0.00E+00				1.18E-02				
784 383638.7 3863507			0.00E+00				1.18E-02 0.00E+00 0.00E+00 0.00E+00 0				
413 381627.7 3865140	9901 DieselExhP 0.01179 NonCancer 0						1.18E-02				
644 381015.9 3862724	9901 DieselExhP 0.01179 NonCancer 0						1.18E-02				
742 382676.9 3863416	9901 DieselExhP 0.01179 NonCancer 0						1.18E-02				
881 383595.9 3864310 623 380491.2 3862726	9901 DieselExhP 0.01179 NonCancer 0 9901 DieselExhP 0.01178 NonCancer 0						1.18E-02 0.00E+00 0.00E+00 0.00E+00 0 1.18E-02 0.00E+00 0.00E+00 0.00E+00 0				
645 381040.9 3862723	9901 DieselExhP 0.01178 NonCancer 0						1.18E-02 0.00E+00 0.00E+00 0.00E+00 0				
440 381227.4 3864847	9901 DieselExhP 0.01177 NonCancer 0						1.18E-02				
502 380576.6 3863942	9901 DieselExhP 0.01176 NonCancer 0						1.18E-02 0.00E+00 0.00E+00 0.00E+00 0				
646 381065.9 3862723 880 383620.8 3864310	9901 DieselExhP 0.01176 NonCancer 0 9901 DieselExhP 0.01176 NonCancer 0						1.18E-02				
647 381090.9 3862723	9901 DieselExhP 0.01175 NonCancer 0						1.18E-02 0.00E+00 0.00E+00 0.00E+00 0				
785 383663.6 3863507	9901 DieselExhP 0.01175 NonCancer 0	0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+	·00 0.00E+00 0.00E+00 0.00E+	00 0.00E+00 *	1.18E-02	0.00E+00	0 0.00E+00 0.00E+00 0.	00E+00 0.00E+00 0.00E+00 INHALATIC	ON 0.00E+00 0.00E+00 0.00E+00
622 380466.3 3862726	9901 DieselExhP 0.01174 NonCancer 0						1.17E-02 0.00E+00 0.00E+00 0.00E+00 0				
648 381115.8 3862723	9901 DieselExhP 0.01174 NonCancer 0						1.17E-02 0.00E+00 0.00E+00 0.00E+00 0				
879 383645.7 3864309 649 381140.8 3862723	9901 DieselExhP 0.01174 NonCancer 0 9901 DieselExhP 0.01173 NonCancer 0						1.17E-02				
738 382580.3 3863416	9901 DieselExhP 0.01173 NonCancer 0						1.17E-02 0.00E+00 0.00E+00 0.00E+00 0				
650 381165.8 3862723	9901 DieselExhP 0.01172 NonCancer C	0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+	·00 0.00E+00 0.00E+00 0.00E+	00 0.00E+00 *	1.17E-02 0.00E+00 0.00E+00 0.00E+00 0	0.00E+00	0 0.00E+00 0.00E+00 0.	00E+00 0.00E+00 0.00E+00 INHALATIC	ON 0.00E+00 0.00E+00 0.00E+00
414 381602.7 3865140	9901 DieselExhP 0.01171 NonCancer 0						1.17E-02 0.00E+00 0.00E+00 0.00E+00 0				
621 380441.3 3862726 651 381190.8 3862723	9901 DieselExhP 0.01171 NonCancer 0 9901 DieselExhP 0.01171 NonCancer 0						1.17E-02				
652 381215.8 3862723			0.00E+00				1.17E-02 0.00E+00 0.00E+00 0.00E+00 0				
743 382701 3863416	9901 DieselExhP 0.0117 NonCancer 0	0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+	·00 0.00E+00 0.00E+00 0.00E+	00 0.00E+00 *	1.17E-02	0.00E+00	0 0.00E+00 0.00E+00 0.	00E+00 0.00E+00 0.00E+00 INHALATIC	ON 0.00E+00 0.00E+00 0.00E+00
786 383688.5 3863507			0.00E+00				1.17E-02 0.00E+00 0.00E+00 0.00E+00 0				
878 383670.6 3864309 653 381240.8 3862722	9901 DieselExhP 0.0117 NonCancer 0 9901 DieselExhP 0.01169 NonCancer 0						1.17E-02				
620 380416.3 3862726	9901 DieselExhP 0.01168 NonCancer 0						1.17E-02 0.00E+00 0.00E+00 0.00E+00 0				
402 381902.2 3865139	9901 DieselExhP 0.01167 NonCancer 0						1.17E-02 0.00E+00 0.00E+00 0.00E+00 0				
654 381265.7 3862722	9901 DieselExhP 0.01167 NonCancer 0						1.17E-02 0.00E+00 0.00E+00 0.00E+00 0				
690 382015.2 3862891	9901 DieselExhP 0.01167 NonCancer 0						1.17E-02 0.00E+00 0.00E+00 0.00E+00 0				
655 381290.7 3862722 619 380391.3 3862727	9901 DieselExhP 0.01166 NonCancer 0 9901 DieselExhP 0.01165 NonCancer 0						1.17E-02				
974 382027 3865089	9901 DieselExhP 0.01165 NonCancer 0						1.17E-02 0.00E+00 0.00E+00 0.00E+00 0				
656 381315.7 3862722	9901 DieselExhP 0.01164 NonCancer 0						1.16E-02				
415 381577.7 3865140	9901 DieselExhP 0.01163 NonCancer 0						1.16E-02				
787 383713.4 3863506 877 383695.5 3864309	9901 DieselExhP 0.01163 NonCancer 0 9901 DieselExhP 0.01163 NonCancer 0						1.16E-02				
618 380366.3 3862727	9901 DieselExhP 0.01163 NonCancer 0						1.16E-02 0.00E+00 0.00E+00 0.00E+00 0				
657 381340.7 3862722	9901 DieselExhP 0.0116 NonCancer C						1.16E-02 0.00E+00 0.00E+00 0.00E+00 0				0.00E+00 0.00E+00 0.00E+00
876 383720.4 3864309	9901 DieselExhP 0.01159 NonCancer 0						1.16E-02				
617 380341.3 3862727	9901 DieselExhP 0.01158 NonCancer 0						1.16E-02				
439 381227.4 3864871 616 380316.4 3862727	9901 DieselExhP 0.01156 NonCancer 0 9901 DieselExhP 0.01156 NonCancer 0						1.16E-02				
875 383745.3 3864308	9901 DieselExhP 0.01156 NonCancer 0						1.16E-02 0.00E+00 0.00E+00 0.00E+00 0				
658 381365.7 3862722	9901 DieselExhP 0.01155 NonCancer 0						1.16E-02				
788 383738.2 3863506	9901 DieselExhP 0.01154 NonCancer 0						1.15E-02 0.00E+00 0.00E+00 0.00E+00 0				
874 383770.2 3864308 416 381552.8 3865141	9901 DieselExhP 0.01154 NonCancer 0 9901 DieselExhP 0.01153 NonCancer 0						1.15E-02				
615 380291.4 3862727	9901 DieselExhP 0.01153 NonCancer 0						1.15E-02 0.00E+00 0.00E+00 0.00E+00 0 1.15E-02 0.00E+00 0.00E+00 0.00E+00 0				
513 380403.5 3863821	9901 DieselExhP 0.01152 NonCancer 0						1.15E-02 0.00E+00 0.00E+00 0.00E+00 0				
659 381390.7 3862722	9901 DieselExhP 0.01152 NonCancer 0						1.15E-02				
873 383795.1 3864308	9901 DieselExhP 0.01152 NonCancer 0						1.15E-02 0.00E+00 0.00E+00 0.00E+00 0				
401 381927.2 3865139 614 380266.4 3862727	9901 DieselExhP 0.01151 NonCancer 0 9901 DieselExhP 0.01151 NonCancer 0						1.15E-02				
872 383820 3864307	9901 DieselExhP 0.01151 NonCancer 0						1.15E-02 0.00E+00 0.00E+00 0.00E+00 0				
744 382725.2 3863416	9901 DieselExhP 0.01149 NonCancer 0	0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+	00 0.00E+00 *	1.15E-02 0.00E+00 0.00E+00 0.00E+00 0	0.00E+00	0 0.00E+00 0.00E+00 0.	00E+00 0.00E+00 0.00E+00 INHALATIC	0.00E+00 0.00E+00 0.00E+00
613 380241.4 3862727	9901 DieselExhP 0.01148 NonCancer 0						1.15E-02				
bbU 381415.6 3862722	9901 DieselExhP 0.01148 NonCancer 0	0.00E+00	0.00E+00	5 U.UUE+UU U.UUE+00 0.00E+	·uu u.uue+uu u.uue+00 0.00E+(JU U.UUE+UU *	1.15E-02 0.00E+00 0.00E+00 0.00E+00 0	0.00E+00	vu u.uuE+UU U.U0E+00 0.	UUE+UU U.UUE+UU U.UUE+OO INHALATIC	ON 0.00E+00 0.00E+00 0.00E+00

	9:32:13 AM - Chronic Risk - Input File: C:\Users\34236\Desktop\B DLID POLABBRE CONC SCENARIO CV CNS		YE BONE/TEETENDO BLOOD ODOR GENERAL DE	ETAILS INH_CONC SOIL_DOSE DERMAL_E MMILK_DC WATER_DC FISH_DOSE CROP_DOS BEEF_DOSI DAIRY_DO! PIG	DOSE CHICKEN LEGG DOSE 1ST DRIVE 2ND DRIVIARD DRIVEPASTURE LEISH CONCWATER CONC	C
503 380551.7 3863943	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.29E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.15E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.	0.00E+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00	•
737 382556.2 3863416 789 383763.1 3863505		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.29E-03 0.00E+00 0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.29E-03 0.00E+00		1.15E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0. 1.15E-02 0.00E+00		
871 383844.9 3864307	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.29E-03 0.00E+00	0.00E+00	1.15E-02	0.00E+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00E+00	
612 380216.4 3862727 550 379746.3 3863539		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.29E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.29E-03 0.00E+00		1.15E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0. 1.14E-02 0.00E+00		
661 381440.6 3862722		0 0.00E+00 0.00E+00 0.00E+00 2.29E-03 0.00E+00		1.14E-02 0.00E+00 0.00E+		
611 380191.4 3862728 417 381527.8 3865141		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.29E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.28E-03 0.00E+00		1.14E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0. 1.14E-02 0.00E+00		
870 383869.8 3864307	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.28E-03 0.00E+00	0.00E+00	1.14E-02	0.00E+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00E+00	
790 383788 3863505 662 381465.6 3862721		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.28E-03 0.00E+00 0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.28E-03 0.00E+00		1.14E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0. 1.14E-02 0.00E+00		
610 380166.5 3862728	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.28E-03 0.00E+00	0.00E+00	1.14E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.	0.00E+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00E+00	
689 382015.2 3862866 869 383894.7 3864307		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.28E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.28E-03 0.00E+00		1.14E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0. 1.14E-02 0.00E+00		
438 381227.5 3864896		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.27E-03 0.00E+00		1.14E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.	0.00E+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00E+00	
868 383919.6 3864306 663 381490.6 3862721		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.27E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.27E-03 0.00E+00		1.14E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0. 1.14E-02 0.00E+00		
791 383812.9 3863504		0 0.00E+00 0.00E+00 0.00E+00 2.27E-03 0.00E+00		1.14E-02	0.00E+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00E+00	
835 384439.5 3863983 867 383944.5 3864306		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.27E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.27E-03 0.00E+00		1.14E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0. 1.14E-02 0.00E+00		
609 380141.5 3862728		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.27E-03 0.00E+00		1.13E-02 0.00E+00 0.00E+		
719 382309.3 3863342 866 383969.4 3864306		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.27E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.27E-03 0.00E+00		1.13E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0. 1.13E-02 0.00E+00		
836 384439.7 3864007		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.26E-03 0.00E+00		1.13E-02 0.00E+00 0.00E+		
834 384439.3 3863958 837 384440 3864032		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.26E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.26E-03 0.00E+00		1.13E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0. 1.13E-02 0.00E+00		
865 383994.3 3864305		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.26E-03 0.00E+00		1.13E-02 0.00E+00 0.00E+		
608 380116.5 3862728 664 381515.6 3862721		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.26E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.26E-03 0.00E+00		1.13E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0. 1.13E-02 0.00E+00		
418 381502.9 3865141		0 0.00E+00 0.00E+00 0.00E+00 2.26E-03 0.00E+00		1.13E-02		
792 383837.7 3863504 833 384439 3863934		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.26E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.26E-03 0.00E+00		1.13E-02 0.00E+00 0.0		
718 382273.6 3863323		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.25E-03 0.00E+00		1.13E-02 0.00E+00 0.00E+		
832 384438.8 3863909 864 384019.2 3864305		0 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 2.25E-03 0.00E+00		1.13E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0. 1.13E-02 0.00E+00		
400 381952.1 3865139		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.25E-03 0.00E+00		1.13E-02 0.00E+00 0.00E+		
838 384440.2 3864056 607 380091.5 3862728		0 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 2.25E-03 0.00E+00		1.13E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0. 1.13E-02 0.00E+00		
76 382532 3863416		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.25E-03 0.00E+00		1.12E-02 0.00E+00 0.00E+		
665 381540.6 3862721 831 384438.5 3863885		0 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 2.25E-03 0.00E+00		1.12E-02 0.00E+00 0.0		
839 384440.4 3864080		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.25E-03 0.00E+00		1.12E-02 0.00E+00 0.00E+		
571 379595.9 3863146 572 379595.6 3863122		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.24E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.24E-03 0.00E+00		1.12E-02 0.00E+00 0.0		
793 383862.6 3863504		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.24E-03 0.00E+00		1.12E-02 0.00E+00 0.0		
570 379596.1 3863170 863 384044.1 3864305		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.24E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.24E-03 0.00E+00		1.12E-02 0.00E+00 0.0		
573 379595.4 3863097		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.24E-03 0.00E+00		1.12E-02 0.00E+00 0.0		
606 380066.5 3862728 569 379596.3 3863195		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.24E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.24E-03 0.00E+00		1.12E-02 0.00E+00 0.0		
830 384438.3 3863861 26 382087.9 3863254		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.24E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.24E-03 0.00E+00		1.12E-02 0.00E+00 0.0		
840 384440.7 3864105		0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.24E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		1.12E-02 0.00E+00 0.0		
574 379595.2 3863073 666 381565.5 3862721		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.23E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.23E-03 0.00E+00		1.12E-02 0.00E+00 0.0		
551 379721.9 3863539		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.23E-03 0.00E+00 0.00E+00		1.12E-02 0.00E+00 0.0		
568 379596.6 3863219 437 381227.6 3864921		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.23E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.23E-03 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 0.00E+00 0. 1.12E-02 0.00E+00		
745 382749.3 3863416	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.23E-03 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 0.00E+00 0.	00E+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00E+00	
605 380041.5 3862728 794 383887.5 3863503		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.23E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.23E-03 0.00E+00		1.11E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0. 1.11E-02 0.00E+00		
829 384438.1 3863836		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.23E-03 0.00E+00		1.11E-02 0.00E+00 0.0	00E+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00E+00	
419 381477.9 3865141 575 379594.9 3863048		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.23E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.23E-03 0.00E+00		1.11E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0. 1.11E-02 0.00E+00		
862 384069 3864305	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.23E-03 0.00E+00	0.00E+00	1.11E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.	0.00E+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00E+00	
567 379596.8 3863244 504 380526.8 3863943		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.22E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.22E-03 0.00E+00		1.11E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0. 1.11E-02 0.00E+00		
667 381590.5 3862721	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.22E-03 0.00E+00	0.00E+00	1.11E-02	0.00E+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00E+00	
576 379594.7 3863024 795 383912.4 3863503		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.22E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.22E-03 0.00E+00		1.11E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0. 1.11E-02 0.00E+00		
841 384440.9 3864129		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.22E-03 0.00E+00		1.11E-02 0.00E+00 0.00E+		
861 384093.9 3864304 604 380016.6 3862728		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.22E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.22E-03 0.00E+00		1.11E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0. 1.11E-02 0.00E+00		
566 379597.1 3863268		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.21E-03 0.00E+00		1.11E-02 0.00E+00 0.00E+		
828 384437.8 3863812 860 384118.8 3864304		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.21E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.21E-03 0.00E+00		1.11E-02 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0. 1.11E-02 0.00E+00		
512 380403.2 3863845		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.21E-03 0.00E+00		1.11E-02 0.00E+00 0.0		
577 379594.4 3862999 688 382015.2 3862842		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.21E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.21E-03 0.00E+00		1.11E-02 0.00E+00 0.0		
603 379991.6 3862729		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.21E-03 0.00E+00		1.10E-02 0.00E+00 0.0		
796 383937.2 3863502 859 384143.7 3864304		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.21E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.20E-03 0.00E+00		1.10E-02 0.00E+00 0.0		
565 379597.3 3863293		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.20E-03 0.00E+00		1.10E-02 0.00E+00 0.0		
668 381615.5 3862721 578 379594.2 3862975		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.20E-03 0.00E+00 0 0.00E+00 0.00E+00 0.00E+00 2.20E-03 0.00E+00		1.10E-02 0.00E+00 0.0		
827 384437.6 3863787	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.20E-03 0.00E+00	0.00E+00	1.10E-02 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00 INHALATION 0.00E+00 0.00E+00 0.00E+00	
842 384441.2 3864154 602 379966.6 3862729		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.20E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.19E-03 0.00E+00		1.10E-02 0.00E+00 0.0		
420 381453 3865141		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.19E-03 0.00E+00		1.10E-02 0.00E+00 0.0		
797 383962.1 3863502 858 384168.6 3864304		0 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 2.19E-03 0.00E+00		1.10E-02 0.00E+00 0.0		

		Risk - Input File: C:\Users\34236\Desktop\Bu	<u> </u>								
			IMMUN KIDNEY GILV REPRO/DE'R		E/TEETENDO BLOOD ODOR		INH_CONC SOIL_DOSE DERMAL_E MMILK_DC				
436 381227.7 3864945 564 379597.5 3863317			0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.09E-02	*****			0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
669 381640.5 3862721			0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.09E-02				0.00E+00 0.00E+00 0.00E+00
552 379697.4 3863538			0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.09E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
579 379594 3862950	9901 DieselExhP	0.01091 NonCancer 0.00E+00 0.00E+00	0.00E+00	2.18E-03	E+00 0.00E+00 0.00E+00 0.00E-	+00 0.00E+00 *	1.09E-02 0.00E+00 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+	-00	E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
601 379941.6 3862729	9901 DieselExhP	0.01089 NonCancer 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+00	2.18E-03	E+00 0.00E+00 0.00E+00 0.00E-	+00 0.00E+00 *	1.09E-02 0.00E+00 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+	-00 0.00E+00 0.00E+00 0.00E+00 0.00	E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
798 383987 3863502			0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.09E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
826 384437.4 3863763			0.00E+00				1.09E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00
857 384193.5 3864303 563 379597.8 3863341			0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.09E-02				0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
399 381977.1 3865138			0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.08E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00
670 381665.5 3862720			0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.08E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
843 384441.4 3864178	9901 DieselExhP	0.01083 NonCancer 0.00E+00 0.00E+00	0.00E+00	2.17E-03 0.00E+00 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E-	+00 0.00E+00 *	1.08E-02 0.00E+00 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+	-00	E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
580 379593.7 3862926	9901 DieselExhP	0.01082 NonCancer 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+00	2.16E-03	E+00 0.00E+00 0.00E+00 0.00E-	+00 0.00E+00 *	1.08E-02 0.00E+00 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+	-00	E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
600 379916.6 3862729	9901 DieselExhP		0.00E+00				1.08E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00
799 384011.9 3863501			0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.08E-02	*****			0.00E+00 0.00E+00 0.00E+00
975 382027 3865114 421 381428 3865141			0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.08E-02 0.00E+00 0.00E+00 0.00E+00 1.08E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
562 379598 3863366			0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.08E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
825 384437.1 3863738			0.00E+00				1.08E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
856 384218.4 3864303	9901 DieselExhP	0.01075 NonCancer 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+00	2.15E-03 0.00E+00 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E-	+00 0.00E+00 *	1.08E-02 0.00E+00 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+	-00 0.00E+00 0.00E+00 0.00E+00 0.00	E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
599 379891.6 3862729			0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.07E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
671 381690.5 3862720 435 381227.8 3864970			0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.07E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
581 379593.5 3862902			0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.07E-02				0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
505 380501.9 3863943			0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.07E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
748 382821 3863437	9901 DieselExhP	0.01069 NonCancer 0.00E+00 0.00E+00	0.00E+00	2.14E-03	E+00 0.00E+00 0.00E+00 0.00E-	+00 0.00E+00 *	1.07E-02 0.00E+00 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+	-00	E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
800 384036.7 3863501			0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.07E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
687 382015.2 3862817			0.00E+00				1.06E-02				0.00E+00
855 384243.4 3864303			0.00E+00				1.06E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
561 379598.2 3863390 746 382773.5 3863416			0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.06E-02				0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
824 384436.9 3863714			0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.06E-02				0.00E+00 0.00E+00 0.00E+00
844 384441.6 3864203			0.00E+00				1.06E-02				0.00E+00 0.00E+00 0.00E+00
598 379866.7 3862729	9901 DieselExhP	0.0106 NonCancer 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+00	2.12E-03 0.00E+00 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E-	+00 0.00E+00 *	1.06E-02 0.00E+00 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+	-00	E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
672 381715.4 3862720			0.00E+00				1.06E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00
801 384061.6 3863500 582 379593.3 3862877			0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.06E-02				0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
422 381403 3865141			0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.05E-02 0.00E+00 0.00E+00 0.00E+00 1.05E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00
511 380403 3863870			0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.05E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
854 384268.3 3864302	9901 DieselExhP	0.01049 NonCancer 0.00E+00 0.00E+00	0.00E+00	2.10E-03	E+00 0.00E+00 0.00E+00 0.00E-	+00 0.00E+00 *	1.05E-02	0.00E+00 0.00E+00 0.00E+00 0.00E+	-00	E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
597 379841.7 3862729	9901 DieselExhP	0.01048 NonCancer 0.00E+00 0.00E+00	0.00E+00	2.10E-03 0.00E+00 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E-	+00 0.00E+00 *	1.05E-02 0.00E+00 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+	-00 0.00E+00 0.00E+00 0.00E+00 0.00		0.00E+00 0.00E+00 0.00E+00
673 381740.4 3862720			0.00E+00				1.05E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00
802 384086.5 3863500 434 381227.8 3864994			0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.05E-02				0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
560 379598.5 3863415			0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.04E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00
823 384436.6 3863689			0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.04E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
583 379593 3862853	9901 DieselExhP	0.01042 NonCancer 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+00	2.08E-03 0.00E+00 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E-	+00 0.00E+00 *	1.04E-02	0.00E+00 0.00E+00 0.00E+00 0.00E+	-00 0.00E+00 0.00E+00 0.00E+00 0.00	E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
596 379816.7 3862729			0.00E+00				1.04E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00
674 381765.4 3862720			0.00E+00				1.04E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
803 384111.4 3863499 853 384293.2 3864302			0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.04E-02				0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
845 384441.9 3864227			0.00E+00				1.03E-02				0.00E+00 0.00E+00 0.00E+00
553 379673 3863538	9901 DieselExhP	0.01031 NonCancer 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+00	2.06E-03 0.00E+00 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E-	+00 0.00E+00 *	1.03E-02 0.00E+00 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+	-00	E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
595 379791.7 3862730			0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.02E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
559 379598.7 3863439			0.00E+00				1.02E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
822 384436.4 3863665 423 381378.1 3865141			0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.02E-02				0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
584 379592.8 3862828			0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.02E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
675 381790.4 3862720	9901 DieselExhP	0.01021 NonCancer 0.00E+00 0.00E+00	0.00E+00	2.04E-03	E+00 0.00E+00 0.00E+00 0.00E-	+00 0.00E+00 *	1.02E-02 0.00E+00 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+	-00		0.00E+00 0.00E+00 0.00E+00
804 384136.2 3863499			0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.02E-02 0.00E+00 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+	-00	E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
852 384318.1 3864302			0.00E+00				1.02E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00
433 381227.9 3865019 506 380477 3863943			0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.01E-02				0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
686 382015.2 3862792			0.00E+00				1.01E-02 0.00E+00 0.00E+00 0.00E+00 1.01E-02 0.00E+00 0.00E+00				0.00E+00
398 382002 3865138			0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.01E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
594 379766.7 3862730			0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.01E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
805 384161.1 3863499 676 381815.4 3862720			0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.01E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
6/6 381815.4 3862/20 72 382297.1 3863322			0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00				1.00E-02 0.00E+00 0.00E+00 0.00E+00 1.00E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
821 384436.2 3863641	9901 DieselExhP		0.00E+00				1.00E-02 0.00E+00 0.00E+00 0.00E+00				0.00E+00
25 382087.9 3863183	9901 DieselExhP	0.00999 NonCancer 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+00	2.00E-03 0.00E+00 0.00E+00 0.00	0.00E+00 0.00E+00 0.00E+00 0.00E+	+00 0.00E+00 *	9.99E-03 0.00E+00 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+	-00	E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
851 384343 3864302			0.00E+00 0.00E+00 0.00E+00 0.00E+00				9.98E-03 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
585 379592.5 3862804			0.00E+00				9.95E-03 0.00E+00 0.00E+00 0.00E+00				0.00E+00
558 379599 3863464 806 384186 3863498			0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00				9.92E-03 0.00E+00 0.00E+00 0.00E+00 9.92E-03 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
846 384442.1 3864252			0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00				9.92E-03 0.00E+00 0.00E+00 0.00E+00 9.92E-03 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
593 379741.7 3862730			0.00E+00				9.91E-03				0.00E+00 0.00E+00 0.00E+00
424 381353.1 3865142			0.00E+00				9.87E-03 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
677 381840.4 3862720			0.00E+00				9.85E-03 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
747 382797.6 3863416			0.00E+00				9.76E-03				0.00E+00 0.00E+00 0.00E+00
432 381228 3865044 807 384210.9 3863498			0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00				9.75E-03 0.00E+00 0.00E+00 0.00E+00 9.75E-03 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
592 379716.8 3862730			0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00				9.72E-03				0.00E+00
820 384435.9 3863616			0.00E+00				9.71E-03				0.00E+00
850 384367.9 3864301	9901 DieselExhP	0.00971 NonCancer 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+00	1.94E-03 0.00E+00 0.00E+00 0.00	0.00E+00 0.00E+00 0.00E	+00 0.00E+00 *	9.71E-03 0.00E+00 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+	-00 0.00E+00 0.00E+00 0.00E+00 0.00	E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
510 380402.7 3863895			0.00E+00 0.00E+00 0.00E+00 0.00E+00				9.68E-03 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00
678 381865.3 3862719			0.00E+00				9.63E-03				0.00E+00 0.00E+00 0.00E+00
586 379592.3 3862779 808 384235.7 3863497			0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00				9.56E-03 0.00E+00 0.00E+00 0.00E+00 9.56E-03 0.00E+00 0.00E+00 0.00E+00				0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
591 379691.8 3862730			0.00E+00				9.49E-03				0.00E+00 0.00E+00 0.00E+00
			0.00E+00				9.43E-03				0.00E+00 0.00E+00 0.00E+00

*HARP - HRACalc v22118 4/7/2023 9:32:13 AM - Chronic Risk - Input File: C:\Users\34236\Desktop	- ·			
	IMMUN KIDNEY GILV REPRO/DE'RESP SKIN EYE		INH_CONC SOIL_DOSE DERMAL_C MMILK_DC WATER_DC FISH_DOSE CROP_DOS BEEF_DOSI DAIRY_DO! PIG_DOSE CHICKEN_I EGG_DOSE 1ST_DRIVE 2ND_DF	
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.88E-03 0.00E+00 0.00		9.42E-03 0.00E+00 0.0	0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.88E-03 0.00E+00 0.00		9.40E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.88E-03 0.00E+00 0.00		9.38E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	.00		9.38E-03 0.00E+00 INHALATION 9.36E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.87E-03 0.00E+00 0.00		9.35E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.87E-03 0.00E+00 0.00		9.35E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.87E-03 0.00E+00 0.00		9.34E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.85E-03 0.00E+00 0.00		9.24E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	.00		9.23E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
431 381228.1 3865068 9901 DieselExhP 0.00922 NonCancer 0.00E+00 0.00E+	.00	E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	9.22E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
590 379666.8 3862730 9901 DieselExhP 0.00921 NonCancer 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.84E-03 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	9.21E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
810 384285.5 3863496 9901 DieselExhP 0.00912 NonCancer 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.82E-03 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	9.12E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
680 381915.3 3862719 9901 DieselExhP 0.00906 NonCancer 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.81E-03 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	9.06E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.80E-03 0.00E+00 0.00		8.99E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.79E-03 0.00E+00 0.00		8.97E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.79E-03 0.00E+00 0.00		8.93E-03 0.00E+00 0.0	0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.78E-03 0.00E+00 0.00		8.89E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.77E-03 0.00E+00 0.00 00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.77E-03 0.00E+00 0.00		8.84E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.77E-03 0.00E+00 0.00		8.82E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.75E-03 0.00E+00 0.00		8.73E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.73E-03 0.00E+00 0.00		8.66E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 1.70E-03 0.00E+00 0.00		8.52E-03 0.00E+00 0.0	0.00E+00
509 380402.5 3863919 9901 DieselExhP 0.0085 NonCancer 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.70E-03 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	8.50E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
812 384335.2 3863496 9901 DieselExhP 0.0085 NonCancer 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.70E-03 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	8.50E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
588 379616.8 3862730 9901 DieselExhP 0.00829 NonCancer 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.66E-03 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	8.29E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.65E-03 0.00E+00 0.00		8.25E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.65E-03 0.00E+00 0.00		8.23E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.64E-03 0.00E+00 0.00		8.22E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	·00		8.10E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.62E-03 0.00E+00 0.00 00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.62E-03 0.00E+00 0.00		8.10E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.62E-03 0.00E+00 0.00		8.09E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.61E-03 0.00E+00 0.00		8.05E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.57E-03 0.00E+00 0.00		7.83E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	.00	E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	7.80E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
429 381228.2 3865118 9901 DieselExhP 0.00744 NonCancer 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.49E-03 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	7.44E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
814 384385 3863495 9901 DieselExhP 0.00742 NonCancer 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.48E-03 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	7.42E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
9 379542.5 3862885 9901 DieselExhP 0.0073 NonCancer 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.46E-03 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	7.30E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.46E-03 0.00E+00 0.00		7.29E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.43E-03 0.00E+00 0.00		7.15E-03 0.00E+00 INHALATION	0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.41E-03 0.00E+00 0.00		7.05E-03 0.00E+00 0.0	0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.35E-03 0.00E+00 0.00		6.74E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	·00		6.73E-03 0.00E+00 INHALATION 6.69E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.34E-03 0.00E+00 0.00		6.47E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.29E-03 0.00E+00 0.00		6.45E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	.00		6.44E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
79 384434.7 3863494 9901 DieselExhP 0.00555 NonCancer 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.11E-03 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	5.55E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
64 381228.3 3865142 9901 DieselExhP 0.00516 NonCancer 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.03E-03 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	5.16E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
23 382055.7 3862687 9901 DieselExhP 0.0047 NonCancer 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 9.40E-04 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	4.70E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 5.82E-04 0.00E+00 0.00		2.91E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 5.34E-04 0.00E+00 0.00		2.67E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	.00		2.62E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	·00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 5.12E-04 0.00E+00 0.00		2.59E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	0.00E+00 0.00E+00 0.00E+00 0.00E+00 5.08E-04 0.00E+00 0.00		2.54E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.96E-04 0.00E+00 0.00		2.48E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.96E-04 0.00E+00 0.00		2.48E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
190 379190.5 3862875 9901 DieselExhP 0.00248 NonCancer 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.96E-04 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	2.48E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
191 379190.8 3862900 9901 DieselExhP 0.00248 NonCancer 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.96E-04 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	2.48E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 4.94E-04 0.00E+00 0.00		2.47E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.94E-04 0.00E+00 0.00		2.47E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.92E-04 0.00E+00 0.00 00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.92E-04 0.00E+00 0.00		2.46E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	·00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.92E-04 0.00E+00 0.00 ·00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.90E-04 0.00E+00 0.00		2.46E-03 0.00E+00 INHALATION 2.45E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	·00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.90E-04 0.00E+00 0.00		2.44E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.86E-04 0.00E+00 0.00		2.43E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 4.84E-04 0.00E+00 0.00		2.42E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.82E-04 0.00E+00 0.00	E+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
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.80E-04 0.00E+00 0.00		2.40E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.76E-04 0.00E+00 0.00		2.38E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.70E-04 0.00E+00 0.00		2.35E-03 0.00E+00 0.0	0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.66E-04 0.00E+00 0.00 00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.64E-04 0.00E+00 0.00		2.33E-03 0.00E+00 INHALATION 2.32E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	·00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.64E-04 0.00E+00 0.00		2.32E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	·00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.64E-04 0.00E+00 0.00		2.32E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.58E-04 0.00E+00 0.00		2.29E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.50E-04 0.00E+00 0.00		2.25E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.48E-04 0.00E+00 0.00		2.24E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
340 382014.6 3862408 9901 DieselExhP 0.00224 NonCancer 0.00E+00 0.00E+	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.48E-04 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	2.24E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.42E-04 0.00E+00 0.00		2.21E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 4.36E-04 0.00E+00 0.00		2.18E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.34E-04 0.00E+00 0.00		2.17E-03 0.00E+00 0.0	0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.32E-04 0.00E+00 0.00		2.16E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.30E-04 0.00E+00 0.00 00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.26E-04 0.00E+00 0.00		2.15E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	·00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.26E-04 0.00E+00 0.00 ·00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.16E-04 0.00E+00 0.00		2.13E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.16E-04 0.00E+00 0.00		2.08E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.14E-04 0.00E+00 0.00		2.07E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
	00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 4.12E-04 0.00E+00 0.00	E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	2.06E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00

	9:32:13 AM - Chronic Risk - Input File: C:\Users\34236\Desk		CVIN EVE DONE/TEE: ENDO DI COD ODOD	CENEDAL DETAILS	INIL CONCCOUR DOCEDEDMAL EMANUE DOMATED DOCUMENT DOCUMENT DOCUMENT DOCUMENT FOR DOCUMENT DRIVE AND DRIVE A	DIVERACTURE AFICIA CONCINATER CONC
INDEX GRP1 GRP2 PO 206 379195.9 3863273		•	SKIN EYE BONE/TEETENDO BLOOD ODOR 04		INH_CONC SOIL_DOSE DERMAL_E MMILK_DC WATER_DC FISH_DOSE CROP_DOS BEEF_DOSI DAIRY_DO: PIG_DOSE CHICKEN_E EGG_DOSE 1ST_DRIVE 2ND_DRIVI3RD_D 2.03E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
29 380446.6 3864400			04		2.02E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
180 379063.7 3862726	9901 DieselExhP	0E+00	04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E	E+00 0.00E+00 *	2.01E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
394 381966.7 3862418			04		2.01E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
343 382014.9 3862335 207 379196.2 3863297			04		1.99E-03 0.00E+00 INHALATION 1.98E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
179 379038.8 3862726			04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E		1.94E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
344 382015 3862311	9901 DieselExhP 0.00194 NonCancer 0.00E+00 0.0	0E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 3.88E-0	04	E+00 0.00E+00 *	1.94E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
208 379196.6 3863322			04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E		1.93E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
393 381954.9 3862397			04		1.90E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
209 379196.9 3863347 178 379013.9 3862726			04		1.89E-03 0.00E+00 INHALATION 1.88E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
349 382015.4 3862190			04		1.85E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
210 379197.3 3863372	9901 DieselExhP	0E+00	04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E	E+00 0.00E+00 *	1.84E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
4 379091.8 3862416			04		1.83E-03 0.00E+00 INHALATION	0.00E+00
177 378988.9 3862726 211 379197.6 3863397			04		1.82E-03 0.00E+00 INHALATION 1.80E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
346 382015.1 3862263			0.00E+00		1.80E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
392 381943 3862375	9901 DieselExhP	0E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 3.60E-0	04	E+00 0.00E+00 *	1.80E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
216 379199.3 3863521			04		1.78E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
176 378964 3862726 212 379197.9 3863422			04		1.76E-03 0.00E+00 INHALATION 1.76E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
347 382015.2 3862238			0.00E+00		1.75E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
217 379176 3863546			04		1.73E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
348 382015.3 3862214	9901 DieselExhP	0E+00	04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E	E+00 0.00E+00 *	1.73E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
53 379199.6 3863546			04		1.72E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
213 379198.3 3863446 391 381931.1 3862354			04		1.72E-03 0.00E+00 INHALATION 1.72E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
175 378939 3862726			04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E		1.71E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
215 379199 3863496	9901 DieselExhP	0E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 3.42E-0	04	E+00 0.00E+00 *	1.71E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
214 379198.6 3863471			04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E		1.70E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
353 382015.7 3862093			04		1.69E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
174 378914.1 3862726 390 381919.2 3862333			0.00E+00		1.66E-03 0.00E+00 INHALATION 1.64E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
12 380328.4 3862105			04		1.61E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
173 378889.1 3862726	9901 DieselExhP	0E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 3.22E-0	04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E	E+00 0.00E+00 *	1.61E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
350 382015.5 3862166			04		1.61E-03 0.00E+00 INHALATION	0.00E+00
11 380216.2 3862088 351 382015.6 3862142			04		1.59E-03 0.00E+00 INHALATION 1.58E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
356 382015.0 3862021			0.00E+00		1.58E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
389 381907.3 3862311	9901 DieselExhP	0E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 3.14E-0	04	E+00 0.00E+00 *	1.57E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
172 378864.2 3862726			04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E		1.56E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
352 382015.6 3862118			04		1.56E-03 0.00E+00 INHALATION	0.00E+00
171 378839.3 3862726 388 381895.4 3862290			04		1.52E-03 0.00E+00 INHALATION 1.51E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
46 379742.3 3864015			04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E		1.50E-03 0.00E+00 0.0	0.00E+00
218 379152.3 3863546	9901 DieselExhP 0.0015 NonCancer 0.00E+00 0.0	0E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 3.00E-0	04	E+00 0.00E+00 *	1.50E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
45 379814.9 3864095			04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E		1.48E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
170 378814.3 3862726			04		1.48E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
61 382016.3 3861924 354 382015.8 3862069			04		1.47E-03 0.00E+00 INHALATION 1.46E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
387 381883.6 3862268			04		1.45E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
169 378789.4 3862726	9901 DieselExhP	0E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.88E-0	04	E+00 0.00E+00 *	1.44E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
355 382015.9 3862045			04		1.44E-03 0.00E+00 INHALATION	0.00E+00
219 379128.7 3863546 168 378764.4 3862726			04		1.41E-03 0.00E+00 INHALATION 1.40E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
49 379422.9 3863797			0.00E+00		1.39E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
386 381871.7 3862247			04		1.39E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
7 379506.9 3861952			04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E		1.37E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
167 378739.5 3862725			04		1.37E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
357 382016.1 3861997 220 379105 3863546			04		1.36E-03 0.00E+00 INHALATION 1.34E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
385 381859.8 3862225			04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E		1.34E-03 0.00E+00 0.0	0.00E+00
47 379640.7 3864008			04		1.33E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
166 378714.6 3862725			04		1.33E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
358 382016.2 3861972 359 382016.2 3861948			04		1.33E-03 0.00E+00 INHALATION 1.33E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
3 378685.2 3862465			0.00E+00		1.31E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
5 378866.2 3862086	9901 DieselExhP	0E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.60E-0	04	E+00 0.00E+00 *	1.30E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
165 378689.6 3862725			04		1.30E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
221 379081.3 3863546			04		1.30E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
384 381847.9 3862204 48 379437.4 3863870			04		1.30E-03 0.00E+00 INHALATION 1.28E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
6 379019.5 3861963			04		1.27E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
164 378664.7 3862725	9901 DieselExhP	0E+00	04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E	E+00 0.00E+00 *	1.27E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
222 379057.7 3863546			04		1.26E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
383 381836 3862182 163 378639 7 3862725			04		1.25E-03 0.00E+00 INHALATION 1.24E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
163 378639.7 3862725 13 380744.7 3861973			0.00E+00		1.24E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
162 378614.8 3862725			04		1.22E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
223 379034 3863545			04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E		1.22E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
382 381824.1 3862161			04		1.21E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
161 378589.9 3862725 224 379010.4 3863545			04		1.19E-03 0.00E+00 INHALATION 1.19E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
44 379633.4 3864110			0.00E+00		1.17E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
381 381812.3 3862139			04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E		1.17E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00
160 378564.9 3862725			04		1.16E-03 0.00E+00 INHALATION	0.00E+00
225 378986.7 3863545			04		1.16E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
159 378540 3862725 226 378963 3863545			04		1.14E-03 0.00E+00 INHALATION 1.13E-03 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
360 381991.5 3861924			04		1.13E-03 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
380 381800.4 3862118	9901 DieselExhP	0E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.26E-0	04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E	E+00 0.00E+00 *	1.13E-03 0.00E+00	0.00E+00 0.00E+00 0.00E+00

*HARP - HRACalc v22118 4/7/2023 9:32:13 AM - Chronic Risk - Input File: C:\Users\34236\Deskto					
	IMMUN KIDNEY GILV REPRO/DE' RESP SKIN EYE			EEF_DOSI DAIRY_DO! PIG_DOSE CHICKEN_I EGG_DOSE 1ST_DRIVE 2ND_DRIVI 3RD_DR	
	+00		1.12E-03		0.00E+00
	+00		1.10E-03		0.00E+00 0.00E+00 0.00E+00
	+00		1.10E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00		1.10E-03		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.16E-04 0.00E+00 0.0		1.08E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.16E-04 0.00E+00 0.0		1.08E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.14E-04 0.00E+00 0.0		1.07E-03		0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.12E-04 0.00E+00 0.0		1.06E-03		0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.12E-04 0.00E+00 0.0		1.06E-03		0.00E+00 0.00E+00 0.00E+00
42 379408.3 3864044 9901 DieselExhP 0.00104 NonCancer 0.00E+00 0.00E-	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.08E-04 0.00E+00 0.0	DE+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.04E-03	0.00E+00	0.00E+00 0.00E+00 0.00E+00
154 378415.3 3862725 9901 DieselExhP 0.00104 NonCancer 0.00E+00 0.00E-	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.08E-04 0.00E+00 0.0	DE+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.04E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+00
230 378868.4 3863545 9901 DieselExhP 0.00104 NonCancer 0.00E+00 0.00E-	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.08E-04 0.00E+00 0.0	DE+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.04E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+00
377 381764.7 3862053 9901 DieselExhP 0.00103 NonCancer 0.00E+00 0.00E-	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.06E-04 0.00E+00 0.0	DE+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	1.03E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.04E-04 0.00E+00 0.0		1.02E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 2.04E-04 0.00E+00 0.0		1.02E-03 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00		1.01E-03		0.00E+00
	+00		1.00E-03		0.00E+00
	+00		1.00E-03		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	+00		1.00E-03		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.98E-04 0.00E+00 0.0		9.90E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.96E-04 0.00E+00 0.0		9.80E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 1.96E-04 0.00E+00 0.0		9.80E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.94E-04 0.00E+00 0.0		9.70E-04		0.00E+00 0.00E+00 0.00E+00
233 378797.1 3863569 9901 DieselExhP 0.00096 NonCancer 0.00E+00 0.00E-	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.92E-04 0.00E+00 0.0	DE+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	9.60E-04	0.00E+00	0.00E+00 0.00E+00 0.00E+00
149 378290.6 3862724 9901 DieselExhP 0.00095 NonCancer 0.00E+00 0.00E-	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.90E-04 0.00E+00 0.0	DE+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	9.50E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+00
234 378796.9 3863593 9901 DieselExhP 0.00095 NonCancer 0.00E+00 0.00E-	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.90E-04 0.00E+00 0.0	DE+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	9.50E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+00
374 381729.1 3861989 9901 DieselExhP 0.00095 NonCancer 0.00E+00 0.00E-	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.90E-04 0.00E+00 0.0	DE+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	9.50E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.88E-04 0.00E+00 0.0		9.40E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00		9.40E-04		0.00E+00 0.00E+00 0.00E+00
	+00		9.40E-04		0.00E+00
	+00		9.30E-04		0.00E+00 0.00E+00 0.00E+00
	+00		9.30E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 9.30E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.84E-04 0.00E+00 0.0		9.20E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.82E-04 0.00E+00 0.0		9.10E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.82E-04 0.00E+00 0.0		9.10E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.80E-04 0.00E+00 0.0		9.00E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00		9.00E-04		0.00E+00 0.00E+00 0.00E+00
364 381892.1 3861924 9901 DieselExhP 0.0009 NonCancer 0.00E+00 0.00E-	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.80E-04 0.00E+00 0.0	DE+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	9.00E-04	0.00E+00	0.00E+00 0.00E+00 0.00E+00
372 381705.3 3861946 9901 DieselExhP 0.0009 NonCancer 0.00E+00 0.00E-	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.80E-04 0.00E+00 0.0	DE+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	9.00E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+00
144 378165.9 3862724 9901 DieselExhP 0.00089 NonCancer 0.00E+00 0.00E-	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.78E-04 0.00E+00 0.0	DE+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	8.90E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.78E-04 0.00E+00 0.0	DE+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	8.90E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.78E-04 0.00E+00 0.0		8.90E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00		8.80E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00
	+00		8.80E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00		8.80E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 8.80E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	+00		8.80E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.76E-04 0.00E+00 0.0		8.80E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.76E-04 0.00E+00 0.0		8.80E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.74E-04 0.00E+00 0.0		8.70E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
239 378795.5 3863711 9901 DieselExhP 0.00087 NonCancer 0.00E+00 0.00E-	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.74E-04 0.00E+00 0.0	DE+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	8.70E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+00
39 379248.6 3864139 9901 DieselExhP 0.00086 NonCancer 0.00E+00 0.00E-	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.72E-04 0.00E+00 0.0	DE+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	8.60E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+00
142 378116 3862724 9901 DieselExhP 0.00086 NonCancer 0.00E+00 0.00E-	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.72E-04 0.00E+00 0.0	DE+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	8.60E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.72E-04 0.00E+00 0.0		8.60E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	0.00E+00 0.00E+00 0.00E+00 0.00E+00 INHALATION	0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.70E-04 0.00E+00 0.0		8.50E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00		8.40E-04		0.00E+00
	+00		8.40E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 8.30E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	+00		8.30E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.66E-04 0.00E+00 0.0		8.30E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.64E-04 0.00E+00 0.0		8.20E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 1.64E-04 0.00E+00 0.0		8.20E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.64E-04 0.00E+00 0.0	DE+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	8.20E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+00
137 377991.3 3862724 9901 DieselExhP 0.00081 NonCancer 0.00E+00 0.00E-	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.62E-04 0.00E+00 0.0	DE+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	8.10E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 1.60E-04 0.00E+00 0.0		8.00E-04		0.00E+00 0.00E+00 0.00E+00
	+00		8.00E-04		0.00E+00 0.00E+00 0.00E+00
	+00		8.00E-04		0.00E+00
	+00		8.00E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 8.00E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.58E-04 0.00E+00 0.0		7.90E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	+00		7.90E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.56E-04 0.00E+00 0.0		7.80E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.56E-04 0.00E+00 0.0		7.80E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.54E-04 0.00E+00 0.0		7.70E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
36 379219.6 3864277 9901 DieselExhP 0.00077 NonCancer 0.00E+00 0.00E-	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.54E-04 0.00E+00 0.0	DE+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	7.70E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.54E-04 0.00E+00 0.0	DE+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	7.70E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.54E-04 0.00E+00 0.0		7.70E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00		7.70E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00		7.60E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00		7.60E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00		7.50E-04 0.00E+00 0.0		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	+00		7.50E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 7.50E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.50E-04 0.00E+00 0.0		7.40E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.48E-04 0.00E+00 0.0		7.40E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.48E-04 0.00E+00 0.0		7.40E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.46E-04 0.00E+00 0.0		7.30E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00		0.00E+00 0.00E+00 0.00E+00
	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.46E-04 0.00E+00 0.0		7.30E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	0.00E+00	0.00E+00 0.00E+00 0.00E+00
250 378744.5 3863949 9901 DieselExhP 0.00073 NonCancer 0.00E+00 0.00E-	+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.46E-04 0.00E+00 0.0	DE+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 *	7.30E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00	0.00E+00	0.00E+00

	9:32:13 AM - Chronic Risk - Input File: C:\Users\34236\Desktop\B DLID POLABBRE CONC SCENARIO CV CNS		'E BONE/TEETENDO BLOOD ODOR GENERAL DETAIL	LS INH_CONC SOIL_DOSE DERMAL_E MMILK_DC WATER_DC FISH_DOSE CROP_DOS BEEF_DOSI DAIRY_DO: PIG_DOSE_CHICKEN_EEGG_	DOSE1ST DRIVE 2ND DRIVIARD DRIVEPASTURE (FISH CONCWATER CONC
127 377741.9 3862723	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 1.44E-04 0.00E+00	0.00E+00	7.20E-04 0.00E+00	DE+00 INHALATION 0.00E+00 0.00E+00
251 378720.4 3863949 126 377716.9 3862723		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.44E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.42E-04 0.00E+00		7.20E-04 0.00E+00 0.0	
252 378696.3 3863949	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 1.42E-04 0.00E+00	0.00E+00	7.10E-04 0.00E+00	DE+00 INHALATION 0.00E+00 0.00E+00 0.00E+00
125 377692 3862723 253 378672.2 3863949		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.40E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.40E-04 0.00E+00		7.00E-04 0.00E+00 0.0	
254 378648.1 3863949		0 0.00E+00 0.00E+00 0.00E+00 1.40E-04 0.00E+00		7.00E-04	DE+00 INHALATION 0.00E+00 0.00E+00 0.00E+00
59 377994.2 3863340 123 377642.1 3862723		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.38E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.38E-04 0.00E+00		6.90E-04 0.00E+00 0.0	
124 377667.1 3862723		0 0.00E+00 0.00E+00 0.00E+00 1.38E-04 0.00E+00		6.90E-04 0.00E+00 0.0	
255 378624 3863949 121 377592.2 3862723		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.38E-04 0.00E+00 0 0.00E+00 0.00E+00 0.00E+00 1.36E-04 0.00E+00		6.90E-04 0.00E+00 0.0	
122 377617.2 3862723		0 0.00E+00 0.00E+00 0.00E+00 1.36E-04 0.00E+00		6.80E-04 0.00E+00 0.0	
256 378599.9 3863949 303 377993.8 3863388		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.36E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.36E-04 0.00E+00		6.80E-04 0.00E+00 0.0	
304 377994 3863364		0 0.00E+00 0.00E+00 0.00E+00 1.36E-04 0.00E+00		6.80E-04 0.00E+00 0.0	
305 377969.8 3863340 120 377567.3 3862723		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.36E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.34E-04 0.00E+00		6.80E-04 0.00E+00 0.0	
257 378575.8 3863949 258 378551.7 3863949		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.34E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.34E-04 0.00E+00		6.70E-04 0.00E+00 0.0	
301 377993.5 3863436		0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.34E-04 0.00E+00 0.0		6.70E-04 0.00E+00 0.0	
302 377993.7 3863412 306 377945.4 3863340		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.34E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.34E-04 0.00E+00		6.70E-04 0.00E+00 0.0	
307 377921.1 3863340		0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.34E-04 0.00E+00 0.0		6.70E-04 0.00E+00 0.0	
118 377517.4 3862723 119 377542.4 3862723		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.32E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.32E-04 0.00E+00		6.60E-04 0.00E+00 0.0	
259 378527.6 3863949		0 0.00E+00 0.00E+00 0.00E+00 1.32E-04 0.00E+00 0.00E+00		6.60E-04 0.00E+00 0.0	
299 377993.2 3863483 300 377993.4 3863460		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.32E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.32E-04 0.00E+00		6.60E-04 0.00E+00 0.0	
308 377896.7 3863340		0 0.00E+00 0.00E+00 0.00E+00 1.32E-04 0.00E+00 0.00E+00		6.60E-04 0.00E+00 0.0	0.00E+00 0.00E+00 0.00E+00
116 377467.5 3862723 117 377492.5 3862723		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.30E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.30E-04 0.00E+00		6.50E-04 0.00E+00 0.0	
260 378503.5 3863949	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 1.30E-04 0.00E+00	0.00E+00	6.50E-04 0.00E+00	DE+00 INHALATION 0.00E+00 0.00E+00 0.00E+00
261 378479.4 3863949 298 377993.1 3863507		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.30E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.30E-04 0.00E+00		6.50E-04 0.00E+00 0.0	
309 377872.4 3863340	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 1.30E-04 0.00E+00	0.00E+00	6.50E-04 0.00E+00 0.0	DE+00 INHALATION 0.00E+00 0.00E+00 0.00E+00
310 377848 3863340 31 379226.8 3864603		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.30E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.28E-04 0.00E+00		6.50E-04 0.00E+00 0.0	
57 378191.9 3863747	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 1.28E-04 0.00E+00	0.00E+00	6.40E-04 0.00E+00	DE+00 INHALATION 0.00E+00 0.00E+00 0.00E+00
115 377442.6 3862722 262 378455.3 3863949		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.28E-04 0.00E+00 0 0.00E+00 0.00E+00 0.00E+00 1.28E-04 0.00E+00		6.40E-04 0.00E+00 0.0	
296 377992.7 3863555		0 0.00E+00 0.00E+00 0.00E+00 1.28E-04 0.00E+00		6.40E-04 0.00E+00 0.0	
297 377992.9 3863531 311 377823.7 3863340		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.28E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.28E-04 0.00E+00		6.40E-04 0.00E+00 0.0	
312 377799.3 3863340		0 0.00E+00 0.00E+00 0.00E+00 1.28E-04 0.00E+00		6.40E-04 0.00E+00 0.0	
2 377357.5 3862548 30 379626.2 3864915		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.26E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.26E-04 0.00E+00		6.30E-04 0.00E+00 0.0	
113 377392.7 3862722 114 377417.7 3862722		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.26E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.26E-04 0.00E+00		6.30E-04 0.00E+00 0.0	
263 378431.2 3863949		0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.26E-04 0.00E+00 0.0		6.30E-04 0.00E+00 0.0	
264 378407.1 3863949 279 378191.5 3863792		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.26E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.26E-04 0.00E+00		6.30E-04 0.00E+00 0.0	
280 378191.7 3863769		0 0.00E+00 0.00E+00 0.00E+00 1.26E-04 0.00E+00 0.00E+00		6.30E-04 0.00E+00 0.0	
281 378169.6 3863747 282 378147.4 3863747		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.26E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.26E-04 0.00E+00		6.30E-04 0.00E+00 0.0	
294 377992.4 3863603	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 1.26E-04 0.00E+00	0.00E+00	6.30E-04 0.00E+00	DE+00 INHALATION 0.00E+00 0.00E+00 0.00E+00
295 377992.6 3863579 313 377775 3863340		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.26E-04 0.00E+00 0 0.00E+00 0.00E+00 0.00E+00 1.26E-04 0.00E+00		6.30E-04 0.00E+00 0.0	
111 377342.8 3862722	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 1.24E-04 0.00E+00	0.00E+00	6.20E-04 0.00E+00	DE+00 INHALATION 0.00E+00 0.00E+00 0.00E+00
112 377367.8 3862722 265 378383 3863949		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.24E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.24E-04 0.00E+00		6.20E-04 0.00E+00 0.0	
266 378358.9 3863949		0 0.00E+00 0.00E+00 0.00E+00 1.24E-04 0.00E+00		6.20E-04 0.00E+00 0.0	
278 378191.3 3863814 283 378125.1 3863747		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.24E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.24E-04 0.00E+00		6.20E-04 0.00E+00 0.0	
284 378102.8 3863747		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.24E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.24E-04 0.00E+00		6.20E-04 0.00E+00 0.0	
292 377992.1 3863651 293 377992.3 3863627		0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.24E-04 0.00E+00 0.0		6.20E-04 0.00E+00 0.0	
314 377750.6 3863340 315 377726.3 3863340		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.24E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.24E-04 0.00E+00		6.20E-04 0.00E+00 0.0	
17 382102.8 3861352		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.22E-04 0.00E+00 0.00E+00		6.10E-04 0.00E+00 0.0	
109 377293 3862722 110 377317.9 3862722		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.22E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.22E-04 0.00E+00		6.10E-04 0.00E+00 0.0	
267 378334.8 3863949	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 1.22E-04 0.00E+00	0.00E+00	6.10E-04 0.00E+00	DE+00 INHALATION 0.00E+00 0.00E+00 0.00E+00
268 378310.7 3863949 276 378190.9 3863859		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.22E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.22E-04 0.00E+00		6.10E-04 0.00E+00 0.0	
277 378191.1 3863837	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 1.22E-04 0.00E+00	0.00E+00	6.10E-04 0.00E+00 0.0	DE+00 INHALATION 0.00E+00 0.00E+00 0.00E+00
285 378080.6 3863747 286 378058.3 3863747		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.22E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.22E-04 0.00E+00		6.10E-04 0.00E+00 0.0	
291 377991.9 3863675	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 1.22E-04 0.00E+00	0.00E+00	6.10E-04 0.00E+00	DE+00 INHALATION 0.00E+00 0.00E+00 0.00E+00
316 377701.9 3863340 317 377677.5 3863340		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.22E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.22E-04 0.00E+00		6.10E-04 0.00E+00 0.0	
107 377243.1 3862722	9901 DieselExhP	0 0.00E+00 0.00E+00 0.00E+00 1.20E-04 0.00E+00	0.00E+00	6.00E-04 0.00E+00	DE+00 INHALATION 0.00E+00 0.00E+00 0.00E+00
108 377268 3862722 269 378286.6 3863949		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.20E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.20E-04 0.00E+00		6.00E-04 0.00E+00 0.0	
270 378262.5 3863949		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.20E-04 0.00E+00 0		6.00E-04 0.00E+00 0.0	
275 378190.8 3863882 287 378036 3863747		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.20E-04 0.00E+00 0 0.00E+00 0.00E+00 0.00E+00 1.20E-04 0.00E+00		6.00E-04 0.00E+00 0.0	
288 378013.7 3863747 289 377991.6 3863723		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.20E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.20E-04 0.00E+00		6.00E-04 0.00E+00 0.0	
290 377991.8 3863699		0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.20E-04 0.00E+00 0.0		6.00E-04 0.00E+00 0.0	
318 377653.2 3863340 319 377628.8 3863340		0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.20E-04 0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.20E-04 0.00E+00		6.00E-04 0.00E+00 0.0	
313 377020.0 3003340	5552 5.6561EAIII 0.0000 NOIICAIICEI 0.00E100 0.00ET00	5 5.552.55 5.552.55 5.552.55 0.602.50 1.202-04 0.002+00		5.552 0 .	2.55 0.00L100 0.00L100 0.00LT00

*HARP - HRACalc v22118 4/7/2023 9:32:13 AM - Chronic Risk - Input File: C:\Users\34236\Desktop\Bullhead Solar\Bullhead Solar\Bullhead Solar_HRAInput.hra

POLID POLABBRE' CONC SCENARIO CV CNS IMMUN KIDNEY GILV REPRO/DE' RESP SKIN EYE BONE/TEE ENDO BLOOD ODOR GENERAL DETAILS INH_CONC SOIL_DOSE CROP_DOS BEEF_DOS! DAIRY_DO! PIG_DOSE CHICKEN_I EGG_DOSE 1ST_DRIVE 2ND_DRIVE PASTURE_FISH_CONC WATER_CONC 51 377193.2 3862722 5.90E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 58 377991.5 3863747 5.90E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 104 377193 3862771 5.90E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 105 377193.1 3862747 5.90E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 106 377218.1 3862722 5.90E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 271 378238.4 3863949 5.90E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 5.90E-04 0.00E+00 0.0 272 378214.3 3863949 0.00E+00 0.00E+00 0.00E+00 5.90E-04 0.00E+00 0.0 273 378190.4 3863927 0.00E+00 0.00E+00 0.00E+00 274 378190.6 3863904 5.90E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 320 377604.5 3863339 5.90E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 321 377580.1 3863339 5.90E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 56 378190.2 3863949 5.80E-04 0.00E+00 0.0 100 377192.5 3862870 5.80E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 101 377192.6 3862845 5.80E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 102 377192.8 3862821 5.80E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 103 377192.9 3862796 5.80E-04 0.00E+00 0.0 322 377555.8 3863339 5.80E-04 0.00E+00 0.0 323 377531.4 3863339 5.80E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 5.70E-04 0.00E+00 0.0 1 377028.2 3862613 0.00E+00 0.00E+00 0.00E+00 96 377192.1 3862969 5.70E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 97 377192.2 3862944 5.70E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 98 377192.3 3862919 5.70E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 99 377192.4 3862895 5.70E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 324 377507.1 3863339 5.70E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 325 377482.7 3863339 5.70E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 93 377191.8 3863043 5.60E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 5.60E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 94 377191.9 3863018 95 377192 3862993 5.60E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 326 377458.3 3863339 5.60E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 327 377434 3863339 5.60E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 21 382964.1 3861824 5.50E-04 0.00E+00 0.0 90 377191.4 3863117 5.50E-04 0.00E+00 0.0 91 377191.5 3863092 5.50E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 92 377191.7 3863068 5.50E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 5.50E-04 0.00E+00 0.0 328 377409.6 3863339 0.00E+00 0.00E+00 0.00E+00 329 377385.3 3863339 5.50E-04 0.00E+00 0.0 87 377191.1 3863191 5.40E-04 0.00E+00 0.0 88 377191.2 3863166 5.40E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 89 377191.3 3863142 5.40E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 330 377360.9 3863339 5.40E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 331 377336.6 3863339 5.40E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 332 377312.2 3863339 5.40E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 84 377190.8 3863265 5.30E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 85 377190.9 3863240 5.30E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 86 377191 3863216 5.30E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 333 377287.9 3863339 5.30E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 5.30E-04 0.00E+00 0.0 334 377263.5 3863339 335 377239.2 3863339 5.30E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 50 377190.4 3863339 5.20E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 82 377190.6 3863315 5.20E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 83 377190.7 3863290 5.20E-04 0.00E+00 0.0 5.20E-04 0.00E+00 0.0 336 377214.8 3863339 0.00E+00 0.00E+00 0.00E+00 19 381965.4 3860758 4.30E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00 20 382065.3 3860829 9901 DieselExhP 0.00037 NonCancer 0.00E+00 * 3.70E-04 0.00E+00 0.0 18 381446.8 3860816 9901 DieselExhP 0.00036 NonCancer 0.00E+00 0.0 3.60E-04 0.00E+00 0.0 0.00E+00 0.00E+00 0.00E+00

	H	IRA Cancer	Risk and Nor	n-Cancer Ch	ronic Risk HAR	P2 Input		
377028.2	3862613		DieselExhP	0.00057	0	0	0	0
377357.5	3862548	9901	DieselExhP	0.00063	0	0	0	0
378685.2	3862465	9901	DieselExhP	0.00131	0	0	0	0
379091.8	3862416	9901	DieselExhP	0.00183	0	0	0	0
378866.2	3862086	9901	DieselExhP	0.0013	0	0	0	0
379019.5	3861963	9901	DieselExhP	0.00127	0	0	0	0
379506.9	3861952	9901	DieselExhP	0.00137	0	0	0	0
379268.7	3863181	9901	DieselExhP	0.00259	0	0	0	0
379542.5	3862885		DieselExhP	0.0073	0	0	0	0
379539.8	3862795		DieselExhP	0.00669	0	0	0	0
380216.2	3862088		DieselExhP	0.00159	0	0	0	0
380328.4	3862105		DieselExhP	0.00161	0	0	0	0
380744.7	3861973		DieselExhP	0.00123	0	0	0	0
380971.9	3861689		DieselExhP	0.0008	0	0	0	0
381963.2	3861691		DieselExhP	0.0008	0	0	0	0
382086.4	3861639		DieselExhP	0.00083	0	0	0	0
382102.8	3861352		DieselExhP	0.00061	0	0	0	0
381446.8	3860816 3860758		DieselExhP DieselExhP	0.00036 0.00043	0	0 0	0	0 0
381965.4 382065.3	3860829		DieselExhP	0.00043	0 0	0	0 0	0
382964.1	3861824		DieselExhP	0.00057	0	0	0	0
381797.9	3862684		DieselExhP	0.00644	0	0	0	0
382055.7	3862687		DieselExhP	0.00044	0	0	0	0
382513.1	3862765		DieselExhP	0.00291	0	0	0	0
382087.9	3863183		DieselExhP	0.00299	0	0	0	0
382087.9	3863254		DieselExhP	0.01118	0	0	0	0
382857.8	3863438		DieselExhP	0.00936	0	0	0	0
384824.8	3863471		DieselExhP	0.00241	0	0	0	0
380446.6	3864400	9901	DieselExhP	0.00202	0	0	0	0
379626.2	3864915	9901	DieselExhP	0.00063	0	0	0	0
379226.8	3864603	9901	DieselExhP	0.00064	0	0	0	0
379422.9	3864429	9901	DieselExhP	0.00077	0	0	0	0
379335.7	3864407	9901	DieselExhP	0.00075	0	0	0	0
379226.8	3864342	9901	DieselExhP	0.00074	0	0	0	0
379372	3864335		DieselExhP	0.0008	0	0	0	0
379219.6	3864277		DieselExhP	0.00077	0	0	0	0
379125.2	3864204		DieselExhP	0.00077	0	0	0	0
379147	3864124		DieselExhP	0.00082	0	0	0	0
379248.6	3864139		DieselExhP	0.00086	0	0	0	0
379408.3	3864160		DieselExhP	0.00094	0	0	0	0
379422.9	3864088		DieselExhP	0.00101	0	0	0	0
379408.3	3864044		DieselExhP	0.00104	0	0	0	0
379408.3	3863993		DieselExhP	0.00109	0	0	0	0
379633.4 379814.9	3864110 3864095		DieselExhP DieselExhP	0.00117 0.00148	0 0	0 0	0 0	0 0
379814.9	3864015		DieselExhP	0.00148	0	0	0	0
3/3/42.3	3004015	9901	DIESEIEXIIA	0.0015	U	U	U	U

	HRA Cancer Risk and Non-Cancer Chronic Risk HARP2 Input									
379640.7	3864008	9901	DieselExhP	0.00133	0	0	0	0		
379437.4	3863870	9901	DieselExhP	0.00128	0	0	0	0		
379422.9	3863797	9901	DieselExhP	0.00139	0	0	0	0		
377190.4	3863339	9901	DieselExhP	0.00052	0	0	0	0		
377193.2	3862722	9901	DieselExhP	0.00059	0	0	0	0		
379188.4	3862727	9901	DieselExhP	0.00243	0	0	0	0		
379199.6	3863546	9901	DieselExhP	0.00172	0	0	0	0		
378797.4	3863545	9901	DieselExhP	0.00098	0	0	0	0		
378792.7	3863949	9901	DieselExhP	0.00075	0	0	0	0		
378190.2	3863949	9901	DieselExhP	0.00058	0	0	0	0		
378191.9	3863747	9901	DieselExhP	0.00064	0	0	0	0		
377991.5	3863747	9901	DieselExhP	0.00059	0	0	0	0		
377994.2	3863340	9901	DieselExhP	0.00069	0	0	0	0		
382014.3	3862504	9901	DieselExhP	0.00267	0	0	0	0		
382016.3	3861924	9901	DieselExhP	0.00147	0	0	0	0		
381693.4	3861924	9901	DieselExhP	0.00088	0	0	0	0		
382027	3865138		DieselExhP	0.00897	0	0	0	0		
381228.3	3865142	9901	DieselExhP	0.00516	0	0	0	0		
381224.4	3863936	9901	DieselExhP	0.01864	0	0	0	0		
380402.2	3863944	9901	DieselExhP	0.00674	0	0	0	0		
380406.2	3863549		DieselExhP	0.01874	0	0	0	0		
379599.7	3863537		DieselExhP	0.00645	0	0	0	0		
379591.8	3862730		DieselExhP	0.0078	0	0	0	0		
382015.2	3862719		DieselExhP	0.00673	0	0	0	0		
382015.2	3863333		DieselExhP	0.01897	0	0	0	0		
382297.1	3863322		DieselExhP	0.01001	0	0	0	0		
382418.5	3863525		DieselExhP	0.0171	0	0	0	0		
382571.2	3863517		DieselExhP	0.01637	0	0	0	0		
382528.1	3863435		DieselExhP	0.01218	0	0	0	0		
382532	3863416		DieselExhP	0.01124	0	0	0	0		
382821.7	3863416		DieselExhP	0.00899	0	0	0	0		
382817.8	3863521		DieselExhP	0.01639	0	0	0	0		
384434.7	3863494		DieselExhP	0.00555	0	0	0	0		
384442.6	3864300		DieselExhP	0.00783	0	0	0	0		
382027 377190.6	3864328		DieselExhP DieselExhP	0.0162	0	0	0	0		
	3863315		DieselExhP	0.00052 0.00052	0	0	0	0 0		
377190.7 377190.8	3863290 3863265		DieselExhP	0.00052	0 0	0 0	0 0	0		
377190.8	3863240		DieselExhP	0.00053	0	0	0	0		
377190.9	3863216		DieselExhP	0.00053	0	0	0	0		
377191.1	3863191		DieselExhP	0.00054	0	0	0	0		
377191.2	3863166		DieselExhP	0.00054	0	0	0	0		
377191.2	3863142		DieselExhP	0.00054	0	0	0	0		
377191.3	3863117		DieselExhP	0.00055	0	0	0	0		
377191.5	3863092		DieselExhP	0.00055	0	0	0	0		
377191.7	3863068		DieselExhP	0.00055	0	0	0	0		
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	HRA Cancer Risk and Non-Cancer Chronic Risk HARP2 Input									
377191.8	3863043	9901	DieselExhP	0.00056	0	0	0	0		
377191.9	3863018	9901	DieselExhP	0.00056	0	0	0	0		
377192	3862993	9901	DieselExhP	0.00056	0	0	0	0		
377192.1	3862969	9901	DieselExhP	0.00057	0	0	0	0		
377192.2	3862944	9901	DieselExhP	0.00057	0	0	0	0		
377192.3	3862919	9901	DieselExhP	0.00057	0	0	0	0		
377192.4	3862895	9901	DieselExhP	0.00057	0	0	0	0		
377192.5	3862870	9901	DieselExhP	0.00058	0	0	0	0		
377192.6	3862845	9901	DieselExhP	0.00058	0	0	0	0		
377192.8	3862821	9901	DieselExhP	0.00058	0	0	0	0		
377192.9	3862796	9901	DieselExhP	0.00058	0	0	0	0		
377193	3862771	9901	DieselExhP	0.00059	0	0	0	0		
377193.1	3862747	9901	DieselExhP	0.00059	0	0	0	0		
377218.1	3862722	9901	DieselExhP	0.00059	0	0	0	0		
377243.1	3862722	9901	DieselExhP	0.0006	0	0	0	0		
377268	3862722	9901	DieselExhP	0.0006	0	0	0	0		
377293	3862722	9901	DieselExhP	0.00061	0	0	0	0		
377317.9	3862722	9901	DieselExhP	0.00061	0	0	0	0		
377342.8	3862722	9901	DieselExhP	0.00062	0	0	0	0		
377367.8	3862722	9901	DieselExhP	0.00062	0	0	0	0		
377392.7	3862722	9901	DieselExhP	0.00063	0	0	0	0		
377417.7	3862722	9901	DieselExhP	0.00063	0	0	0	0		
377442.6	3862722	9901	DieselExhP	0.00064	0	0	0	0		
377467.5	3862723		DieselExhP	0.00065	0	0	0	0		
377492.5	3862723		DieselExhP	0.00065	0	0	0	0		
377517.4	3862723		DieselExhP	0.00066	0	0	0	0		
377542.4	3862723		DieselExhP	0.00066	0	0	0	0		
377567.3	3862723		DieselExhP	0.00067	0	0	0	0		
377592.2	3862723		DieselExhP	0.00068	0	0	0	0		
377617.2	3862723		DieselExhP	0.00068	0	0	0	0		
377642.1	3862723		DieselExhP	0.00069	0	0	0	0		
377667.1	3862723		DieselExhP	0.00069	0	0	0	0		
377692	3862723		DieselExhP	0.0007	0	0	0	0		
377716.9	3862723		DieselExhP	0.00071	0	0	0	0		
377741.9	3862723		DieselExhP	0.00072	0	0	0	0		
377766.8	3862723		DieselExhP	0.00073	0	0	0	0		
377791.8	3862723		DieselExhP	0.00073	0	0	0	0		
377816.7 377841.6	3862723		DieselExhP	0.00074	0	0	0	0		
	3862723		DieselExhP	0.00075	0	0	0	0		
377866.6	3862723		DieselExhP	0.00076	0	0	0	0		
377891.5	3862724		DieselExhP	0.00077	0	0	0	0		
377916.5 377941.4	3862724 3862724		DieselExhP DieselExhP	0.00078 0.00079	0 0	0 0	0 0	0 0		
377966.4	3862724		DieselExhP	0.00079	0	0	0	0		
377991.3	3862724		DieselExhP	0.00081	0	0	0	0		
377991.3	3862724		DieselExhP	0.00081	0	0	0	0		
3/0010.2	3002/24	3301	PIESCIEXIIA	0.00062	U	U	U	U		

HRA Cancer Risk and Non-Cancer Chronic Risk HARP2 Input									
378041.2	3862724	9901 DieselExhP	0.00083	0	0	0	0		
378066.1	3862724	9901 DieselExhP	0.00084	0	0	0	0		
378091.1	3862724	9901 DieselExhP	0.00085	0	0	0	0		
378116	3862724	9901 DieselExhP	0.00086	0	0	0	0		
378140.9	3862724	9901 DieselExhP	0.00087	0	0	0	0		
378165.9	3862724	9901 DieselExhP	0.00089	0	0	0	0		
378190.8	3862724	9901 DieselExhP	0.0009	0	0	0	0		
378215.8	3862724	9901 DieselExhP	0.00091	0	0	0	0		
378240.7	3862724	9901 DieselExhP	0.00093	0	0	0	0		
378265.6	3862724	9901 DieselExhP	0.00094	0	0	0	0		
378290.6	3862724	9901 DieselExhP	0.00095	0	0	0	0		
378315.5	3862724	9901 DieselExhP	0.00097	0	0	0	0		
378340.5	3862725	9901 DieselExhP	0.00099	0	0	0	0		
378365.4	3862725	9901 DieselExhP	0.001	0	0	0	0		
378390.3	3862725	9901 DieselExhP	0.00102	0	0	0	0		
378415.3	3862725	9901 DieselExhP	0.00104	0	0	0	0		
378440.2	3862725	9901 DieselExhP	0.00106	0	0	0	0		
378465.2	3862725	9901 DieselExhP	0.00108	0	0	0	0		
378490.1	3862725	9901 DieselExhP	0.0011	0	0	0	0		
378515	3862725	9901 DieselExhP	0.00112	0	0	0	0		
378540	3862725	9901 DieselExhP	0.00114	0	0	0	0		
378564.9	3862725	9901 DieselExhP	0.00116	0	0	0	0		
378589.9	3862725	9901 DieselExhP	0.00119	0	0	0	0		
378614.8	3862725	9901 DieselExhP	0.00122	0	0	0	0		
378639.7	3862725	9901 DieselExhP	0.00124	0	0	0	0		
378664.7	3862725	9901 DieselExhP	0.00127	0	0	0	0		
378689.6	3862725	9901 DieselExhP	0.0013	0	0	0	0		
378714.6	3862725	9901 DieselExhP	0.00133	0	0	0	0		
378739.5	3862725	9901 DieselExhP	0.00137	0	0	0	0		
378764.4	3862726	9901 DieselExhP	0.0014	0	0	0	0		
378789.4	3862726	9901 DieselExhP	0.00144	0	0	0	0		
378814.3	3862726	9901 DieselExhP	0.00148	0	0	0	0		
378839.3	3862726	9901 DieselExhP	0.00152	0	0	0	0		
378864.2	3862726	9901 DieselExhP	0.00156	0	0	0	0		
378889.1	3862726	9901 DieselExhP	0.00161	0	0	0	0		
378914.1	3862726	9901 DieselExhP	0.00166	0	0	0	0		
378939	3862726	9901 DieselExhP	0.00171	0	0	0	0		
378964	3862726	9901 DieselExhP	0.00176	0	0	0	0		
378988.9	3862726	9901 DieselExhP	0.00182	0	0	0	0		
379013.9	3862726	9901 DieselExhP	0.00188	0	0	0	0		
379038.8	3862726	9901 DieselExhP	0.00194	0	0	0	0		
379063.7 379088.7	3862726 3862726	9901 DieselExhP 9901 DieselExhP	0.00201 0.00208	0 0	0 0	0 0	0 0		
379088.7	3862726	9901 DieselExhP	0.00208	0	0	0	0		
379113.6	3862726	9901 DieselExhP	0.00216	0	0	0	0		
379138.6	3862726	9901 DieselExhP				0	0		
3/3103.5	3002/20	AAOT DIGSGIEXUL	0.00233	0	0	U	U		

HRA Cancer Risk and Non-Cancer Chronic Risk HARP2 Input									
379188.8	3862751	9901	DieselExhP	0.00245	0	0	0	0	
379189.1	3862776	9901	DieselExhP	0.00246	0	0	0	0	
379189.5	3862801	9901	DieselExhP	0.00247	0	0	0	0	
379189.8	3862826	9901	DieselExhP	0.00248	0	0	0	0	
379190.1	3862851	9901	DieselExhP	0.00248	0	0	0	0	
379190.5	3862875	9901	DieselExhP	0.00248	0	0	0	0	
379190.8	3862900	9901	DieselExhP	0.00248	0	0	0	0	
379191.2	3862925	9901	DieselExhP	0.00247	0	0	0	0	
379191.5	3862950	9901	DieselExhP	0.00246	0	0	0	0	
379191.8	3862975	9901	DieselExhP	0.00244	0	0	0	0	
379192.2	3863000	9901	DieselExhP	0.00242	0	0	0	0	
379192.5	3863024	9901	DieselExhP	0.0024	0	0	0	0	
379192.9	3863049	9901	DieselExhP	0.00238	0	0	0	0	
379193.2	3863074	9901	DieselExhP	0.00235	0	0	0	0	
379193.5	3863099	9901	DieselExhP	0.00232	0	0	0	0	
379193.9	3863124	9901	DieselExhP	0.00229	0	0	0	0	
379194.2	3863149	9901	DieselExhP	0.00225	0	0	0	0	
379194.5	3863173	9901	DieselExhP	0.00221	0	0	0	0	
379194.9	3863198	9901	DieselExhP	0.00217	0	0	0	0	
379195.2	3863223	9901	DieselExhP	0.00213	0	0	0	0	
379195.6	3863248	9901	DieselExhP	0.00208	0	0	0	0	
379195.9	3863273	9901	DieselExhP	0.00203	0	0	0	0	
379196.2	3863297	9901	DieselExhP	0.00198	0	0	0	0	
379196.6	3863322	9901	DieselExhP	0.00193	0	0	0	0	
379196.9	3863347	9901	DieselExhP	0.00189	0	0	0	0	
379197.3	3863372	9901	DieselExhP	0.00184	0	0	0	0	
379197.6	3863397	9901	DieselExhP	0.0018	0	0	0	0	
379197.9	3863422	9901	DieselExhP	0.00176	0	0	0	0	
379198.3	3863446	9901	DieselExhP	0.00172	0	0	0	0	
379198.6	3863471	9901	DieselExhP	0.0017	0	0	0	0	
379199	3863496	9901	DieselExhP	0.00171	0	0	0	0	
379199.3	3863521	9901	DieselExhP	0.00178	0	0	0	0	
379176	3863546	9901	DieselExhP	0.00173	0	0	0	0	
379152.3	3863546	9901	DieselExhP	0.0015	0	0	0	0	
379128.7	3863546	9901	DieselExhP	0.00141	0	0	0	0	
379105	3863546	9901	DieselExhP	0.00134	0	0	0	0	
379081.3	3863546		DieselExhP	0.0013	0	0	0	0	
379057.7	3863546		DieselExhP	0.00126	0	0	0	0	
379034	3863545	9901	DieselExhP	0.00122	0	0	0	0	
379010.4	3863545	9901	DieselExhP	0.00119	0	0	0	0	
378986.7	3863545	9901	DieselExhP	0.00116	0	0	0	0	
378963	3863545		DieselExhP	0.00113	0	0	0	0	
378939.4	3863545		DieselExhP	0.0011	0	0	0	0	
378915.7	3863545		DieselExhP	0.00108	0	0	0	0	
378892.1	3863545		DieselExhP	0.00106	0	0	0	0	
378868.4	3863545	9901	DieselExhP	0.00104	0	0	0	0	

	HRA Cancer Risk and Non-Cancer Chronic Risk HARP2 Input									
378844.7	3863545	9901	DieselExhP	0.00102	0	0	0	0		
378821.1	3863545	9901	DieselExhP	0.001	0	0	0	0		
378797.1	3863569	9901	DieselExhP	0.00096	0	0	0	0		
378796.9	3863593	9901	DieselExhP	0.00095	0	0	0	0		
378796.6	3863616	9901	DieselExhP	0.00093	0	0	0	0		
378796.3	3863640	9901	DieselExhP	0.00092	0	0	0	0		
378796	3863664	9901	DieselExhP	0.0009	0	0	0	0		
378795.8	3863688	9901	DieselExhP	0.00089	0	0	0	0		
378795.5	3863711	9901	DieselExhP	0.00087	0	0	0	0		
378795.2	3863735	9901	DieselExhP	0.00086	0	0	0	0		
378794.9	3863759	9901	DieselExhP	0.00084	0	0	0	0		
378794.6	3863783	9901	DieselExhP	0.00083	0	0	0	0		
378794.4	3863806	9901	DieselExhP	0.00082	0	0	0	0		
378794.1	3863830	9901	DieselExhP	0.0008	0	0	0	0		
378793.8	3863854	9901	DieselExhP	0.00079	0	0	0	0		
378793.5	3863878	9901	DieselExhP	0.00078	0	0	0	0		
378793.3	3863901	9901	DieselExhP	0.00077	0	0	0	0		
378793	3863925	9901	DieselExhP	0.00076	0	0	0	0		
378768.6	3863949	9901	DieselExhP	0.00074	0	0	0	0		
378744.5	3863949	9901	DieselExhP	0.00073	0	0	0	0		
378720.4	3863949	9901	DieselExhP	0.00072	0	0	0	0		
378696.3	3863949	9901	DieselExhP	0.00071	0	0	0	0		
378672.2	3863949	9901	DieselExhP	0.0007	0	0	0	0		
378648.1	3863949		DieselExhP	0.0007	0	0	0	0		
378624	3863949		DieselExhP	0.00069	0	0	0	0		
378599.9	3863949		DieselExhP	0.00068	0	0	0	0		
378575.8	3863949		DieselExhP	0.00067	0	0	0	0		
378551.7	3863949		DieselExhP	0.00067	0	0	0	0		
378527.6	3863949		DieselExhP	0.00066	0	0	0	0		
378503.5	3863949		DieselExhP	0.00065	0	0	0	0		
378479.4	3863949		DieselExhP	0.00065	0	0	0	0		
378455.3	3863949		DieselExhP	0.00064	0	0	0	0		
378431.2	3863949		DieselExhP	0.00063	0	0	0	0		
378407.1	3863949		DieselExhP	0.00063	0	0	0	0		
378383	3863949		DieselExhP	0.00062	0	0	0	0		
378358.9	3863949		DieselExhP DieselExhP	0.00062	0	0	0	0		
378334.8 378310.7	3863949		DieselExhP	0.00061	0	0	0	0		
378286.6	3863949 3863949		DieselExhP	0.00061 0.0006	0 0	0 0	0 0	0 0		
378262.5	3863949		DieselExhP	0.0006	0	0	0	0		
378238.4	3863949		DieselExhP	0.00059	0	0	0	0		
378238.4	3863949		DieselExhP	0.00059	0	0	0	0		
378214.3	3863949		DieselExhP	0.00059	0	0	0	0		
378190.4	3863904		DieselExhP	0.00059	0	0	0	0		
378190.8	3863882		DieselExhP	0.00039	0	0	0	0		
378190.8	3863859		DieselExhP	0.00061	0	0	0	0		
2/0120.3	2002023	2201	PICSCIEXIIA	0.00001	U	U	U	U		

HRA Cancer Risk and Non-Cancer Chronic Risk HARP2 Input									
378191.1	3863837	9901	DieselExhP	0.00061	0	0	0	0	
378191.3	3863814	9901	DieselExhP	0.00062	0	0	0	0	
378191.5	3863792	9901	DieselExhP	0.00063	0	0	0	0	
378191.7	3863769	9901	DieselExhP	0.00063	0	0	0	0	
378169.6	3863747	9901	DieselExhP	0.00063	0	0	0	0	
378147.4	3863747	9901	DieselExhP	0.00063	0	0	0	0	
378125.1	3863747	9901	DieselExhP	0.00062	0	0	0	0	
378102.8	3863747	9901	DieselExhP	0.00062	0	0	0	0	
378080.6	3863747	9901	DieselExhP	0.00061	0	0	0	0	
378058.3	3863747	9901	DieselExhP	0.00061	0	0	0	0	
378036	3863747	9901	DieselExhP	0.0006	0	0	0	0	
378013.7	3863747	9901	DieselExhP	0.0006	0	0	0	0	
377991.6	3863723	9901	DieselExhP	0.0006	0	0	0	0	
377991.8	3863699	9901	DieselExhP	0.0006	0	0	0	0	
377991.9	3863675	9901	DieselExhP	0.00061	0	0	0	0	
377992.1	3863651	9901	DieselExhP	0.00062	0	0	0	0	
377992.3	3863627	9901	DieselExhP	0.00062	0	0	0	0	
377992.4	3863603	9901	DieselExhP	0.00063	0	0	0	0	
377992.6	3863579	9901	DieselExhP	0.00063	0	0	0	0	
377992.7	3863555	9901	DieselExhP	0.00064	0	0	0	0	
377992.9	3863531	9901	DieselExhP	0.00064	0	0	0	0	
377993.1	3863507	9901	DieselExhP	0.00065	0	0	0	0	
377993.2	3863483	9901	DieselExhP	0.00066	0	0	0	0	
377993.4	3863460	9901	DieselExhP	0.00066	0	0	0	0	
377993.5	3863436	9901	DieselExhP	0.00067	0	0	0	0	
377993.7	3863412	9901	DieselExhP	0.00067	0	0	0	0	
377993.8	3863388		DieselExhP	0.00068	0	0	0	0	
377994	3863364		DieselExhP	0.00068	0	0	0	0	
377969.8	3863340		DieselExhP	0.00068	0	0	0	0	
377945.4	3863340		DieselExhP	0.00067	0	0	0	0	
377921.1	3863340		DieselExhP	0.00067	0	0	0	0	
377896.7	3863340		DieselExhP	0.00066	0	0	0	0	
377872.4	3863340		DieselExhP	0.00065	0	0	0	0	
377848	3863340		DieselExhP	0.00065	0	0	0	0	
377823.7	3863340		DieselExhP	0.00064	0	0	0	0	
377799.3	3863340		DieselExhP	0.00064	0	0	0	0	
377775	3863340		DieselExhP	0.00063	0	0	0	0	
377750.6	3863340		DieselExhP	0.00062	0	0	0	0	
377726.3	3863340		DieselExhP	0.00062	0	0	0	0	
377701.9	3863340		DieselExhP	0.00061	0	0	0	0	
377677.5	3863340		DieselExhP	0.00061	0	0	0	0	
377653.2	3863340		DieselExhP	0.0006	0	0	0	0	
377628.8	3863340		DieselExhP	0.0006	0	0	0	0	
377604.5	3863339		DieselExhP	0.00059	0	0	0	0	
377580.1	3863339		DieselExhP	0.00059	0	0	0	0	
377555.8	3863339	9901	DieselExhP	0.00058	0	0	0	0	

	HRA Cancer Risk and Non-Cancer Chronic Risk HARP2 Input									
377531.4	3863339	9901	DieselExhP	0.00058	0	0	0	0		
377507.1	3863339	9901	DieselExhP	0.00057	0	0	0	0		
377482.7	3863339	9901	DieselExhP	0.00057	0	0	0	0		
377458.3	3863339	9901	DieselExhP	0.00056	0	0	0	0		
377434	3863339	9901	DieselExhP	0.00056	0	0	0	0		
377409.6	3863339	9901	DieselExhP	0.00055	0	0	0	0		
377385.3	3863339	9901	DieselExhP	0.00055	0	0	0	0		
377360.9	3863339	9901	DieselExhP	0.00054	0	0	0	0		
377336.6	3863339	9901	DieselExhP	0.00054	0	0	0	0		
377312.2	3863339	9901	DieselExhP	0.00054	0	0	0	0		
377287.9	3863339	9901	DieselExhP	0.00053	0	0	0	0		
377263.5	3863339	9901	DieselExhP	0.00053	0	0	0	0		
377239.2	3863339	9901	DieselExhP	0.00053	0	0	0	0		
377214.8	3863339	9901	DieselExhP	0.00052	0	0	0	0		
382014.4	3862480	9901	DieselExhP	0.00256	0	0	0	0		
382014.4	3862456	9901	DieselExhP	0.00262	0	0	0	0		
382014.5	3862432	9901	DieselExhP	0.00232	0	0	0	0		
382014.6	3862408	9901	DieselExhP	0.00224	0	0	0	0		
382014.7	3862384	9901	DieselExhP	0.00218	0	0	0	0		
382014.8	3862359	9901	DieselExhP	0.00207	0	0	0	0		
382014.9	3862335	9901	DieselExhP	0.00199	0	0	0	0		
382015	3862311	9901	DieselExhP	0.00194	0	0	0	0		
382015	3862287	9901	DieselExhP	0.00206	0	0	0	0		
382015.1	3862263	9901	DieselExhP	0.0018	0	0	0	0		
382015.2	3862238	9901	DieselExhP	0.00175	0	0	0	0		
382015.3	3862214	9901	DieselExhP	0.00173	0	0	0	0		
382015.4	3862190		DieselExhP	0.00185	0	0	0	0		
382015.5	3862166		DieselExhP	0.00161	0	0	0	0		
382015.6	3862142		DieselExhP	0.00158	0	0	0	0		
382015.6	3862118		DieselExhP	0.00156	0	0	0	0		
382015.7	3862093		DieselExhP	0.00169	0	0	0	0		
382015.8	3862069		DieselExhP	0.00146	0	0	0	0		
382015.9	3862045		DieselExhP	0.00144	0	0	0	0		
382016	3862021		DieselExhP	0.00158	0	0	0	0		
382016.1	3861997		DieselExhP	0.00136	0	0	0	0		
382016.2	3861972		DieselExhP	0.00133	0	0	0	0		
382016.2	3861948		DieselExhP	0.00133	0	0	0	0		
381991.5	3861924		DieselExhP	0.00113	0	0	0	0		
381966.6	3861924		DieselExhP	0.001	0	0	0	0		
381941.8	3861924		DieselExhP	0.00094	0	0	0	0		
381917	3861924		DieselExhP	0.00091	0	0	0	0		
381892.1	3861924		DieselExhP	0.0009	0	0	0	0		
381867.3	3861924		DieselExhP	0.00089	0	0	0	0		
381842.5	3861924		DieselExhP DieselExhP	0.00088	0	0	0	0		
381817.6	3861924			0.00088	0	0	0	0		
381792.8	3861924	9901	DieselExhP	0.00088	0	0	0	0		

HRA Cancer Risk and Non-Cancer Chronic Risk HARP2 Input									
381767.9	3861924	9901 DieselExhP	0.00088	0	0	0	0		
381743.1	3861924	9901 DieselExhP	0.00088	0	0	0	0		
381718.3	3861924	9901 DieselExhP	0.00088	0	0	0	0		
381705.3	3861946	9901 DieselExhP	0.0009	0	0	0	0		
381717.2	3861967	9901 DieselExhP	0.00093	0	0	0	0		
381729.1	3861989	9901 DieselExhP	0.00095	0	0	0	0		
381741	3862010	9901 DieselExhP	0.00098	0	0	0	0		
381752.8	3862032	9901 DieselExhP	0.001	0	0	0	0		
381764.7	3862053	9901 DieselExhP	0.00103	0	0	0	0		
381776.6	3862075	9901 DieselExhP	0.00107	0	0	0	0		
381788.5	3862096	9901 DieselExhP	0.0011	0	0	0	0		
381800.4	3862118	9901 DieselExhP	0.00113	0	0	0	0		
381812.3	3862139	9901 DieselExhP	0.00117	0	0	0	0		
381824.1	3862161	9901 DieselExhP	0.00121	0	0	0	0		
381836	3862182	9901 DieselExhP	0.00125	0	0	0	0		
381847.9	3862204	9901 DieselExhP	0.0013	0	0	0	0		
381859.8	3862225	9901 DieselExhP	0.00134	0	0	0	0		
381871.7	3862247	9901 DieselExhP	0.00139	0	0	0	0		
381883.6	3862268	9901 DieselExhP	0.00145	0	0	0	0		
381895.4	3862290	9901 DieselExhP	0.00151	0	0	0	0		
381907.3	3862311	9901 DieselExhP	0.00157	0	0	0	0		
381919.2	3862333	9901 DieselExhP	0.00164	0	0	0	0		
381931.1	3862354	9901 DieselExhP	0.00172	0	0	0	0		
381943	3862375	9901 DieselExhP	0.0018	0	0	0	0		
381954.9	3862397	9901 DieselExhP	0.0019	0	0	0	0		
381966.7	3862418	9901 DieselExhP	0.00201	0	0	0	0		
381978.6	3862440	9901 DieselExhP	0.00215	0	0	0	0		
381990.5	3862461	9901 DieselExhP	0.00232	0	0	0	0		
382002.4	3862483	9901 DieselExhP	0.00254	0	0	0	0		
382002 381977.1	3865138	9901 DieselExhP 9901 DieselExhP	0.01011 0.01084	0	0	0	0		
381952.1	3865138 3865139	9901 DieselExhP	0.01084	0 0	0 0	0 0	0 0		
381927.2	3865139	9901 DieselExhP	0.01120	0	0	0	0		
381902.2	3865139	9901 DieselExhP	0.01151	0	0	0	0		
381302.2	3865139	9901 DieselExhP	0.01107	0	0	0	0		
381852.3	3865139	9901 DieselExhP	0.01189	0	0	0	0		
381827.3	3865139	9901 DieselExhP	0.01196	0	0	0	0		
381802.4	3865139	9901 DieselExhP	0.012	0	0	0	0		
381777.4	3865139	9901 DieselExhP	0.01201	0	0	0	0		
381752.5	3865140	9901 DieselExhP	0.01201	0	0	0	0		
381727.5	3865140	9901 DieselExhP	0.01198	0	0	0	0		
381702.5	3865140	9901 DieselExhP	0.01194	0	0	0	0		
381677.6	3865140	9901 DieselExhP	0.01189	0	0	0	0		
381652.6	3865140	9901 DieselExhP	0.01184	0	0	0	0		
381627.7	3865140	9901 DieselExhP	0.01179	0	0	0	0		
381602.7	3865140	9901 DieselExhP	0.01171	0	0	0	0		

	HRA Cancer Risk and Non-Cancer Chronic Risk HARP2 Input									
381577.7	3865140	9901	DieselExhP	0.01163	0	0	0	0		
381552.8	3865141	9901	DieselExhP	0.01153	0	0	0	0		
381527.8	3865141	9901	DieselExhP	0.01142	0	0	0	0		
381502.9	3865141	9901	DieselExhP	0.01128	0	0	0	0		
381477.9	3865141	9901	DieselExhP	0.01113	0	0	0	0		
381453	3865141	9901	DieselExhP	0.01096	0	0	0	0		
381428	3865141	9901	DieselExhP	0.01076	0	0	0	0		
381403	3865141	9901	DieselExhP	0.01051	0	0	0	0		
381378.1	3865141	9901	DieselExhP	0.01022	0	0	0	0		
381353.1	3865142	9901	DieselExhP	0.00987	0	0	0	0		
381328.2	3865142	9901	DieselExhP	0.00942	0	0	0	0		
381303.2	3865142	9901	DieselExhP	0.00882	0	0	0	0		
381278.2	3865142	9901	DieselExhP	0.00809	0	0	0	0		
381253.3	3865142	9901	DieselExhP	0.00705	0	0	0	0		
381228.2	3865118	9901	DieselExhP	0.00744	0	0	0	0		
381228.2	3865093	9901	DieselExhP	0.00852	0	0	0	0		
381228.1	3865068	9901	DieselExhP	0.00922	0	0	0	0		
381228	3865044		DieselExhP	0.00975	0	0	0	0		
381227.9	3865019		DieselExhP	0.01014	0	0	0	0		
381227.8	3864994	9901	DieselExhP	0.01045	0	0	0	0		
381227.8	3864970		DieselExhP	0.01071	0	0	0	0		
381227.7	3864945		DieselExhP	0.01094	0	0	0	0		
381227.6	3864921		DieselExhP	0.01115	0	0	0	0		
381227.5	3864896		DieselExhP	0.01137	0	0	0	0		
381227.4	3864871		DieselExhP	0.01156	0	0	0	0		
381227.4	3864847		DieselExhP	0.01177	0	0	0	0		
381227.3	3864822		DieselExhP	0.01196	0	0	0	0		
381227.2	3864798		DieselExhP	0.01209	0	0	0	0		
381227.1	3864773		DieselExhP	0.01219	0	0	0	0		
381227	3864748		DieselExhP	0.0122	0	0	0	0		
381227	3864724		DieselExhP	0.01223	0	0	0	0		
381226.9	3864699		DieselExhP	0.01224	0	0	0	0		
381226.8	3864675		DieselExhP	0.01227	0	0	0	0		
381226.7	3864650		DieselExhP	0.01228	0	0	0	0		
381226.6	3864625		DieselExhP DieselExhP	0.0123	0	0	0	0		
381226.6 381226.5	3864601		DieselExhP	0.01227	0	0	0	0		
381226.4	3864576		DieselExhP	0.01233	0	0	0	0		
381226.4	3864552 3864527		DieselExhP	0.01236 0.01243	0 0	0 0	0 0	0 0		
381226.2	3864502		DieselExhP	0.01245	0	0	0	0		
381226.2	3864478		DieselExhP	0.01243	0	0	0	0		
381226.2	3864453		DieselExhP	0.01248	0	0	0	0		
381226.1	3864428		DieselExhP	0.01251	0	0	0	0		
381225.9	3864404		DieselExhP	0.01237	0	0	0	0		
381225.8	3864379		DieselExhP	0.0126	0	0	0	0		
381225.8	3864355		DieselExhP	0.01269	0	0	0	0		
301223.0	JUU- 1 JJJ	2201	DICOCILATII	0.01203	U	•	9	J		

	HRA Cancer Risk and Non-Cancer Chronic Risk HARP2 Input									
381225.7	3864330	9901	DieselExhP	0.01271	0	0	0	0		
381225.6	3864305	9901	DieselExhP	0.01279	0	0	0	0		
381225.5	3864281	9901	DieselExhP	0.01285	0	0	0	0		
381225.4	3864256	9901	DieselExhP	0.01297	0	0	0	0		
381225.4	3864232	9901	DieselExhP	0.01309	0	0	0	0		
381225.3	3864207	9901	DieselExhP	0.0132	0	0	0	0		
381225.2	3864182	9901	DieselExhP	0.01334	0	0	0	0		
381225.1	3864158	9901	DieselExhP	0.0135	0	0	0	0		
381225	3864133	9901	DieselExhP	0.01368	0	0	0	0		
381225	3864109	9901	DieselExhP	0.01387	0	0	0	0		
381224.9	3864084	9901	DieselExhP	0.01412	0	0	0	0		
381224.8	3864059	9901	DieselExhP	0.01441	0	0	0	0		
381224.7	3864035	9901	DieselExhP	0.01481	0	0	0	0		
381224.6	3864010	9901	DieselExhP	0.0153	0	0	0	0		
381224.6	3863986	9901	DieselExhP	0.01595	0	0	0	0		
381224.5	3863961	9901	DieselExhP	0.01693	0	0	0	0		
381199.5	3863937	9901	DieselExhP	0.01765	0	0	0	0		
381174.6	3863937	9901	DieselExhP	0.0168	0	0	0	0		
381149.7	3863937	9901	DieselExhP	0.01617	0	0	0	0		
381124.7	3863937	9901	DieselExhP	0.0157	0	0	0	0		
381099.8	3863938	9901	DieselExhP	0.01533	0	0	0	0		
381074.9	3863938	9901	DieselExhP	0.01496	0	0	0	0		
381050	3863938	9901	DieselExhP	0.0147	0	0	0	0		
381025.1	3863938		DieselExhP	0.01445	0	0	0	0		
381000.2	3863938		DieselExhP	0.0142	0	0	0	0		
380975.3	3863939		DieselExhP	0.01408	0	0	0	0		
380950.4	3863939		DieselExhP	0.01392	0	0	0	0		
380925.4	3863939		DieselExhP	0.01376	0	0	0	0		
380900.5	3863939		DieselExhP	0.01363	0	0	0	0		
380875.6	3863940		DieselExhP	0.01347	0	0	0	0		
380850.7	3863940		DieselExhP	0.01334	0	0	0	0		
380825.8	3863940		DieselExhP	0.0132	0	0	0	0		
380800.9	3863940		DieselExhP	0.01304	0	0	0	0		
380776	3863941		DieselExhP	0.01297	0	0	0	0		
380751	3863941		DieselExhP	0.01284	0	0	0	0		
380726.1	3863941		DieselExhP	0.01268	0	0	0	0		
380701.2	3863941		DieselExhP	0.01256	0	0	0	0		
380676.3	3863942		DieselExhP	0.01243	0	0	0	0		
380651.4	3863942		DieselExhP	0.0123	0	0	0	0		
380626.5	3863942		DieselExhP	0.01215	0	0	0	0		
380601.6	3863942		DieselExhP DieselExhP	0.01193	0	0	0	0		
380576.6	3863942			0.01176	0	0	0	0		
380551.7 380526.8	3863943 3863943		DieselExhP DieselExhP	0.01147 0.01111	0 0	0 0	0 0	0 0		
380501.9	3863943		DieselExhP	0.01111	0	0	0	0		
380477	3863943		DieselExhP	0.01069	0	0	0	0		
300477	3003343	3301	PICSCIEXIIA	0.01013	U	U	U	U		

	HRA Cancer Risk and Non-Cancer Chronic Risk HARP2 Input									
380452.1	3863944	9901	DieselExhP	0.00938	0	0	0	0		
380427.2	3863944	9901	DieselExhP	0.00823	0	0	0	0		
380402.5	3863919	9901	DieselExhP	0.0085	0	0	0	0		
380402.7	3863895	9901	DieselExhP	0.00968	0	0	0	0		
380403	3863870	9901	DieselExhP	0.01049	0	0	0	0		
380403.2	3863845	9901	DieselExhP	0.01106	0	0	0	0		
380403.5	3863821	9901	DieselExhP	0.01152	0	0	0	0		
380403.7	3863796	9901	DieselExhP	0.01189	0	0	0	0		
380404	3863771	9901	DieselExhP	0.01223	0	0	0	0		
380404.2	3863746	9901	DieselExhP	0.01255	0	0	0	0		
380404.5	3863722	9901	DieselExhP	0.01287	0	0	0	0		
380404.7	3863697	9901	DieselExhP	0.01323	0	0	0	0		
380404.9	3863672	9901	DieselExhP	0.01363	0	0	0	0		
380405.2	3863648	9901	DieselExhP	0.01411	0	0	0	0		
380405.4	3863623	9901	DieselExhP	0.01472	0	0	0	0		
380405.7	3863598	9901	DieselExhP	0.01555	0	0	0	0		
380405.9	3863573	9901	DieselExhP	0.01686	0	0	0	0		
380381.7	3863548	9901	DieselExhP	0.01781	0	0	0	0		
380357.3	3863548	9901	DieselExhP	0.01676	0	0	0	0		
380332.8	3863548	9901	DieselExhP	0.01633	0	0	0	0		
380308.4	3863547	9901	DieselExhP	0.01578	0	0	0	0		
380284	3863547	9901	DieselExhP	0.01534	0	0	0	0		
380259.5	3863547	9901	DieselExhP	0.01482	0	0	0	0		
380235.1	3863546	9901	DieselExhP	0.01472	0	0	0	0		
380210.6	3863546		DieselExhP	0.01442	0	0	0	0		
380186.2	3863546	9901	DieselExhP	0.01419	0	0	0	0		
380161.8	3863545		DieselExhP	0.01383	0	0	0	0		
380137.3	3863545		DieselExhP	0.01387	0	0	0	0		
380112.9	3863544		DieselExhP	0.01369	0	0	0	0		
380088.5	3863544		DieselExhP	0.01354	0	0	0	0		
380064	3863544		DieselExhP	0.01321	0	0	0	0		
380039.6	3863543		DieselExhP	0.01324	0	0	0	0		
380015.1	3863543		DieselExhP	0.0131	0	0	0	0		
379990.7	3863543		DieselExhP	0.01301	0	0	0	0		
379966.3	3863542		DieselExhP	0.01314	0	0	0	0		
379941.8	3863542		DieselExhP	0.0128	0	0	0	0		
379917.4	3863542		DieselExhP	0.01263	0	0	0	0		
379892.9	3863541		DieselExhP	0.01249	0	0	0	0		
379868.5	3863541		DieselExhP	0.01253	0	0	0	0		
379844.1	3863541		DieselExhP	0.01217	0	0	0	0		
379819.6	3863540		DieselExhP	0.01201	0	0	0	0		
379795.2	3863540		DieselExhP	0.01202	0	0	0	0		
379770.7	3863539		DieselExhP	0.01182	0	0	0	0		
379746.3	3863539		DieselExhP	0.01144	0	0	0	0		
379721.9	3863539		DieselExhP	0.01116	0	0	0	0		
379697.4	3863538	9901	DieselExhP	0.01091	0	0	0	0		

	HRA Cancer Risk and Non-Cancer Chronic Risk HARP2 Input									
379673	3863538	9901	DieselExhP	0.01031	0	0	0	0		
379648.5	3863538	9901	DieselExhP	0.0094	0	0	0	0		
379624.1	3863537	9901	DieselExhP	0.00809	0	0	0	0		
379599.4	3863513	9901	DieselExhP	0.0081	0	0	0	0		
379599.2	3863488	9901	DieselExhP	0.00923	0	0	0	0		
379599	3863464	9901	DieselExhP	0.00992	0	0	0	0		
379598.7	3863439	9901	DieselExhP	0.01023	0	0	0	0		
379598.5	3863415	9901	DieselExhP	0.01044	0	0	0	0		
379598.2	3863390	9901	DieselExhP	0.01061	0	0	0	0		
379598	3863366	9901	DieselExhP	0.01075	0	0	0	0		
379597.8	3863341	9901	DieselExhP	0.01085	0	0	0	0		
379597.5	3863317	9901	DieselExhP	0.01093	0	0	0	0		
379597.3	3863293	9901	DieselExhP	0.01101	0	0	0	0		
379597.1	3863268	9901	DieselExhP	0.01107	0	0	0	0		
379596.8	3863244	9901	DieselExhP	0.01112	0	0	0	0		
379596.6	3863219	9901	DieselExhP	0.01116	0	0	0	0		
379596.3	3863195	9901	DieselExhP	0.01119	0	0	0	0		
379596.1	3863170	9901	DieselExhP	0.01121	0	0	0	0		
379595.9	3863146	9901	DieselExhP	0.01122	0	0	0	0		
379595.6	3863122	9901	DieselExhP	0.01122	0	0	0	0		
379595.4	3863097	9901	DieselExhP	0.0112	0	0	0	0		
379595.2	3863073	9901	DieselExhP	0.01117	0	0	0	0		
379594.9	3863048	9901	DieselExhP	0.01113	0	0	0	0		
379594.7	3863024	9901	DieselExhP	0.01109	0	0	0	0		
379594.4	3862999		DieselExhP	0.01105	0	0	0	0		
379594.2	3862975		DieselExhP	0.01099	0	0	0	0		
379594	3862950		DieselExhP	0.01091	0	0	0	0		
379593.7	3862926		DieselExhP	0.01082	0	0	0	0		
379593.5	3862902		DieselExhP	0.01071	0	0	0	0		
379593.3	3862877		DieselExhP	0.01058	0	0	0	0		
379593	3862853		DieselExhP	0.01042	0	0	0	0		
379592.8	3862828		DieselExhP	0.01022	0	0	0	0		
379592.5	3862804		DieselExhP	0.00995	0	0	0	0		
379592.3	3862779		DieselExhP	0.00956	0	0	0	0		
379592.1	3862755		DieselExhP	0.00893	0	0	0	0		
379616.8	3862730		DieselExhP	0.00829	0	0	0	0		
379641.8	3862730		DieselExhP	0.00883	0	0	0	0		
379666.8	3862730		DieselExhP	0.00921	0	0	0	0		
379691.8	3862730		DieselExhP	0.00949	0	0	0	0		
379716.8	3862730		DieselExhP	0.00972	0	0	0	0		
379741.7	3862730		DieselExhP	0.00991	0	0	0	0		
379766.7	3862730		DieselExhP	0.01009	0	0	0	0		
379791.7	3862730		DieselExhP	0.01024	0	0	0	0		
379816.7	3862729		DieselExhP	0.01037	0	0	0	0		
379841.7	3862729		DieselExhP	0.01048	0	0	0	0		
379866.7	3862729	9901	DieselExhP	0.0106	0	0	0	0		

	HRA Cancer Risk and Non-Cancer Chronic Risk HARP2 Input								
379891.6	3862729	9901	DieselExhP	0.01072	0	0	0	0	
379916.6	3862729	9901	DieselExhP	0.0108	0	0	0	0	
379941.6	3862729	9901	DieselExhP	0.01089	0	0	0	0	
379966.6	3862729	9901	${\sf DieselExhP}$	0.01097	0	0	0	0	
379991.6	3862729	9901	${\sf DieselExhP}$	0.01103	0	0	0	0	
380016.6	3862728	9901	${\sf DieselExhP}$	0.01108	0	0	0	0	
380041.5	3862728	9901	${\sf DieselExhP}$	0.01114	0	0	0	0	
380066.5	3862728	9901	DieselExhP	0.0112	0	0	0	0	
380091.5	3862728	9901	${\sf DieselExhP}$	0.01125	0	0	0	0	
380116.5	3862728	9901	DieselExhP	0.01129	0	0	0	0	
380141.5	3862728	9901	DieselExhP	0.01134	0	0	0	0	
380166.5	3862728	9901	DieselExhP	0.01139	0	0	0	0	
380191.4	3862728	9901	DieselExhP	0.01143	0	0	0	0	
380216.4	3862727	9901	DieselExhP	0.01146	0	0	0	0	
380241.4	3862727	9901	DieselExhP	0.01148	0	0	0	0	
380266.4	3862727	9901	DieselExhP	0.01151	0	0	0	0	
380291.4	3862727	9901	DieselExhP	0.01153	0	0	0	0	
380316.4	3862727		DieselExhP	0.01156	0	0	0	0	
380341.3	3862727	9901	DieselExhP	0.01158	0	0	0	0	
380366.3	3862727	9901	DieselExhP	0.01162	0	0	0	0	
380391.3	3862727		DieselExhP	0.01165	0	0	0	0	
380416.3	3862726		DieselExhP	0.01168	0	0	0	0	
380441.3	3862726		DieselExhP	0.01171	0	0	0	0	
380466.3	3862726		DieselExhP	0.01174	0	0	0	0	
380491.2	3862726		DieselExhP	0.01178	0	0	0	0	
380516.2	3862726		DieselExhP	0.0118	0	0	0	0	
380541.2	3862726		DieselExhP	0.01183	0	0	0	0	
380566.2	3862726		DieselExhP	0.01183	0	0	0	0	
380591.2	3862726		DieselExhP	0.01184	0	0	0	0	
380616.2	3862726		DieselExhP	0.01184	0	0	0	0	
380641.1	3862725		DieselExhP	0.01185	0	0	0	0	
380666.1	3862725		DieselExhP	0.01185	0	0	0	0	
380691.1	3862725		DieselExhP	0.01186	0	0	0	0	
380716.1	3862725		DieselExhP	0.01186	0	0	0	0	
380741.1	3862725		DieselExhP	0.01186	0	0	0	0	
380766.1	3862725		DieselExhP DieselExhP	0.01187	0	0	0	0 0	
380791 380816	3862725 3862725		DieselExhP	0.01188 0.01187	0 0	0 0	0 0	0	
380810	3862724		DieselExhP	0.01187	0	0	0	0	
380866	3862724		DieselExhP	0.01186	0	0	0	0	
380800	3862724		DieselExhP	0.01185	0	0	0	0	
380916	3862724		DieselExhP	0.01183	0	0	0	0	
380940.9	3862724		DieselExhP	0.01184	0	0	0	0	
380945.9	3862724		DieselExhP	0.01183	0	0	0	0	
380990.9	3862724		DieselExhP	0.01181	0	0	0	0	
381015.9	3862724		DieselExhP	0.0110	0	0	0	0	
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	HRA Cancer Risk and Non-Cancer Chronic Risk HARP2 Input								
381040.9	3862723	9901	DieselExhP	0.01178	0	0	0	0	
381065.9	3862723	9901	DieselExhP	0.01176	0	0	0	0	
381090.9	3862723	9901	DieselExhP	0.01175	0	0	0	0	
381115.8	3862723	9901	DieselExhP	0.01174	0	0	0	0	
381140.8	3862723	9901	DieselExhP	0.01173	0	0	0	0	
381165.8	3862723	9901	DieselExhP	0.01172	0	0	0	0	
381190.8	3862723	9901	DieselExhP	0.01171	0	0	0	0	
381215.8	3862723	9901	DieselExhP	0.0117	0	0	0	0	
381240.8	3862722	9901	DieselExhP	0.01169	0	0	0	0	
381265.7	3862722	9901	DieselExhP	0.01167	0	0	0	0	
381290.7	3862722	9901	DieselExhP	0.01166	0	0	0	0	
381315.7	3862722	9901	DieselExhP	0.01164	0	0	0	0	
381340.7	3862722	9901	DieselExhP	0.0116	0	0	0	0	
381365.7	3862722	9901	DieselExhP	0.01155	0	0	0	0	
381390.7	3862722	9901	DieselExhP	0.01152	0	0	0	0	
381415.6	3862722	9901	DieselExhP	0.01148	0	0	0	0	
381440.6	3862722		DieselExhP	0.01144	0	0	0	0	
381465.6	3862721		DieselExhP	0.0114	0	0	0	0	
381490.6	3862721		DieselExhP	0.01135	0	0	0	0	
381515.6	3862721	9901	DieselExhP	0.01129	0	0	0	0	
381540.6	3862721		DieselExhP	0.01124	0	0	0	0	
381565.5	3862721		DieselExhP	0.01117	0	0	0	0	
381590.5	3862721		DieselExhP	0.0111	0	0	0	0	
381615.5	3862721		DieselExhP	0.01101	0	0	0	0	
381640.5	3862721		DieselExhP	0.01093	0	0	0	0	
381665.5	3862720		DieselExhP	0.01083	0	0	0	0	
381690.5	3862720		DieselExhP	0.01072	0	0	0	0	
381715.4	3862720		DieselExhP	0.0106	0	0	0	0	
381740.4	3862720		DieselExhP	0.01048	0	0	0	0	
381765.4	3862720		DieselExhP	0.01035	0	0	0	0	
381790.4	3862720		DieselExhP	0.01021	0	0	0	0	
381815.4	3862720		DieselExhP	0.01004	0	0	0	0	
381840.4	3862720		DieselExhP	0.00985	0	0	0	0	
381865.3	3862719		DieselExhP	0.00963	0	0	0	0	
381890.3	3862719		DieselExhP	0.00938	0	0	0	0	
381915.3	3862719		DieselExhP DieselExhP	0.00906	0	0	0	0	
381940.3 381965.3	3862719		DieselExhP	0.00866	0	0	0	0	
381990.3	3862719 3862719		DieselExhP	0.0081 0.00729	0 0	0 0	0 0	0 0	
382015.2	3862743		DieselExhP	0.00729	0	0	0	0	
382015.2	3862768		DieselExhP	0.00823	0	0	0	0	
382015.2	3862792		DieselExhP	0.00943	0	0	0	0	
382015.2	3862817		DieselExhP	0.01013	0	0	0	0	
382015.2	3862842		DieselExhP	0.01004	0	0	0	0	
382015.2	3862866		DieselExhP	0.01104	0	0	0	0	
382015.2	3862891		DieselExhP	0.01167	0	0	0	0	
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	HRA Cancer Risk and Non-Cancer Chronic Risk HARP2 Input								
382015.2	3862915	9901	DieselExhP	0.01193	0	0	0	0	
382015.2	3862940	9901	DieselExhP	0.01218	0	0	0	0	
382015.2	3862965	9901	DieselExhP	0.0124	0	0	0	0	
382015.2	3862989	9901	DieselExhP	0.01262	0	0	0	0	
382015.2	3863014	9901	DieselExhP	0.01284	0	0	0	0	
382015.2	3863038	9901	DieselExhP	0.01305	0	0	0	0	
382015.2	3863063	9901	DieselExhP	0.01325	0	0	0	0	
382015.2	3863088	9901	DieselExhP	0.01346	0	0	0	0	
382015.2	3863112	9901	DieselExhP	0.01368	0	0	0	0	
382015.2	3863137	9901	DieselExhP	0.01392	0	0	0	0	
382015.2	3863161	9901	DieselExhP	0.01418	0	0	0	0	
382015.2	3863186	9901	DieselExhP	0.01447	0	0	0	0	
382015.2	3863210	9901	DieselExhP	0.0148	0	0	0	0	
382015.2	3863235	9901	DieselExhP	0.01519	0	0	0	0	
382015.2	3863260	9901	DieselExhP	0.01569	0	0	0	0	
382015.2	3863284	9901	DieselExhP	0.01634	0	0	0	0	
382015.2	3863309	9901	DieselExhP	0.01738	0	0	0	0	
382038.7	3863332	9901	DieselExhP	0.01755	0	0	0	0	
382062.2	3863331	9901	DieselExhP	0.0167	0	0	0	0	
382085.7	3863330	9901	DieselExhP	0.01574	0	0	0	0	
382109.2	3863329	9901	DieselExhP	0.01511	0	0	0	0	
382132.7	3863329	9901	DieselExhP	0.01459	0	0	0	0	
382156.2	3863328	9901	DieselExhP	0.01414	0	0	0	0	
382179.7	3863327	9901	DieselExhP	0.0137	0	0	0	0	
382203.2	3863326		DieselExhP	0.01326	0	0	0	0	
382226.7	3863325	9901	DieselExhP	0.01278	0	0	0	0	
382250.1	3863324	9901	DieselExhP	0.01216	0	0	0	0	
382273.6	3863323		DieselExhP	0.01127	0	0	0	0	
382309.3	3863342		DieselExhP	0.01133	0	0	0	0	
382321.4	3863362		DieselExhP	0.01213	0	0	0	0	
382333.5	3863383		DieselExhP	0.01268	0	0	0	0	
382345.7	3863403		DieselExhP	0.01312	0	0	0	0	
382357.8	3863423		DieselExhP	0.01352	0	0	0	0	
382369.9	3863444		DieselExhP	0.01391	0	0	0	0	
382382.1	3863464		DieselExhP	0.01437	0	0	0	0	
382394.2	3863485		DieselExhP	0.01496	0	0	0	0	
382406.4	3863505		DieselExhP	0.01581	0	0	0	0	
382440.3	3863524		DieselExhP	0.01616	0	0	0	0	
382462.1	3863523		DieselExhP	0.01559	0	0	0	0	
382483.9	3863522		DieselExhP	0.01528	0	0	0	0	
382505.7	3863521		DieselExhP	0.01518	0	0	0	0	
382527.6	3863520		DieselExhP	0.01529	0	0	0	0	
382549.4	3863519		DieselExhP	0.0157	0	0	0	0	
382560.4	3863497		DieselExhP	0.01502	0	0	0	0	
382549.7	3863476		DieselExhP	0.01407	0	0	0	0	
382538.9	3863456	9901	DieselExhP	0.0132	0	0	0	0	

	Н	RA Cancer F	Risk and Noi	n-Cancer Ch	ronic Risk H	ARP2 Input		
382556.2	3863416	9901 (DieselExhP	0.01147	0	0	0	0
382580.3	3863416	9901 (DieselExhP	0.01173	0	0	0	0
382604.5	3863416	9901 (DieselExhP	0.01186	0	0	0	0
382628.6	3863416	9901 (DieselExhP	0.01189	0	0	0	0
382652.7	3863416	9901 (DieselExhP	0.01186	0	0	0	0
382676.9	3863416	9901 (DieselExhP	0.01179	0	0	0	0
382701	3863416	9901 (DieselExhP	0.0117	0	0	0	0
382725.2	3863416	9901 (DieselExhP	0.01149	0	0	0	0
382749.3	3863416	9901 (DieselExhP	0.01115	0	0	0	0
382773.5	3863416	9901 (DieselExhP	0.01061	0	0	0	0
382797.6	3863416	9901 (DieselExhP	0.00976	0	0	0	0
382821	3863437	9901 (DieselExhP	0.01069	0	0	0	0
382820.2	3863458	9901 (DieselExhP	0.01209	0	0	0	0
382819.4	3863479	9901 (DieselExhP	0.01333	0	0	0	0
382818.6	3863500	9901 (DieselExhP	0.01476	0	0	0	0
382842.7	3863521	9901 (DieselExhP	0.01529	0	0	0	0
382867.6	3863520	9901 (DieselExhP	0.01446	0	0	0	0
382892.5	3863520	9901 (DieselExhP	0.01398	0	0	0	0
382917.3	3863520	9901 (DieselExhP	0.01368	0	0	0	0
382942.2	3863519	9901 (DieselExhP	0.01347	0	0	0	0
382967.1	3863519	9901 (DieselExhP	0.01333	0	0	0	0
382992	3863518	9901 (DieselExhP	0.01322	0	0	0	0
383016.8	3863518	9901 (DieselExhP	0.01314	0	0	0	0
383041.7	3863518	9901 (DieselExhP	0.01305	0	0	0	0
383066.6	3863517	9901 I	DieselExhP	0.01298	0	0	0	0
383091.5	3863517	9901 (DieselExhP	0.01292	0	0	0	0
383116.3	3863516	9901 I	DieselExhP	0.01288	0	0	0	0
383141.2	3863516	9901 (DieselExhP	0.0128	0	0	0	0
383166.1	3863515	9901 (DieselExhP	0.01272	0	0	0	0
383191	3863515	9901 (DieselExhP	0.01267	0	0	0	0
383215.8	3863515	9901 (DieselExhP	0.01261	0	0	0	0
383240.7	3863514	9901 (DieselExhP	0.01254	0	0	0	0
383265.6	3863514		DieselExhP	0.01248	0	0	0	0
383290.5	3863513		DieselExhP	0.01242	0	0	0	0
383315.3	3863513		DieselExhP	0.01237	0	0	0	0
383340.2	3863512		DieselExhP	0.01232	0	0	0	0
383365.1	3863512		DieselExhP	0.01228	0	0	0	0
383390	3863512		DieselExhP	0.01224	0	0	0	0
383414.8	3863511		DieselExhP	0.01221	0	0	0	0
383439.7	3863511		DieselExhP	0.01217	0	0	0	0
383464.6	3863510		DieselExhP	0.01213	0	0	0	0
383489.5	3863510		DieselExhP	0.01209	0	0	0	0
383514.4	3863510		DieselExhP	0.01205	0	0	0	0
383539.2	3863509		DieselExhP	0.012	0	0	0	0
383564.1	3863509		DieselExhP	0.01194	0	0	0	0
383589	3863508	9901 (DieselExhP	0.0119	0	0	0	0

	Н	RA Cancer	Risk and No	n-Cancer Ch	ronic Risk H	ARP2 Input		
383613.9	3863508	9901	DieselExhP	0.01185	0	0	0	0
383638.7	3863507	9901	DieselExhP	0.0118	0	0	0	0
383663.6	3863507	9901	DieselExhP	0.01175	0	0	0	0
383688.5	3863507	9901	DieselExhP	0.0117	0	0	0	0
383713.4	3863506	9901	DieselExhP	0.01163	0	0	0	0
383738.2	3863506	9901	DieselExhP	0.01154	0	0	0	0
383763.1	3863505	9901	DieselExhP	0.01147	0	0	0	0
383788	3863505	9901	${\sf DieselExhP}$	0.01141	0	0	0	0
383812.9	3863504	9901	${\sf DieselExhP}$	0.01135	0	0	0	0
383837.7	3863504	9901	${\sf DieselExhP}$	0.01128	0	0	0	0
383862.6	3863504	9901	${\sf DieselExhP}$	0.01122	0	0	0	0
383887.5	3863503	9901	DieselExhP	0.01114	0	0	0	0
383912.4	3863503	9901	DieselExhP	0.01109	0	0	0	0
383937.2	3863502	9901	DieselExhP	0.01103	0	0	0	0
383962.1	3863502	9901	DieselExhP	0.01096	0	0	0	0
383987	3863502	9901	DieselExhP	0.01089	0	0	0	0
384011.9	3863501	9901	DieselExhP	0.01079	0	0	0	0
384036.7	3863501	9901	DieselExhP	0.01069	0	0	0	0
384061.6	3863500	9901	DieselExhP	0.01059	0	0	0	0
384086.5	3863500	9901	DieselExhP	0.01048	0	0	0	0
384111.4	3863499	9901	DieselExhP	0.01035	0	0	0	0
384136.2	3863499	9901	DieselExhP	0.01021	0	0	0	0
384161.1	3863499	9901	DieselExhP	0.01007	0	0	0	0
384186	3863498		DieselExhP	0.00992	0	0	0	0
384210.9	3863498	9901	DieselExhP	0.00975	0	0	0	0
384235.7	3863497	9901	DieselExhP	0.00956	0	0	0	0
384260.6	3863497		DieselExhP	0.00935	0	0	0	0
384285.5	3863496		DieselExhP	0.00912	0	0	0	0
384310.4	3863496		DieselExhP	0.00884	0	0	0	0
384335.2	3863496		DieselExhP	0.0085	0	0	0	0
384360.1	3863495		DieselExhP	0.00805	0	0	0	0
384385	3863495		DieselExhP	0.00742	0	0	0	0
384409.9	3863494		DieselExhP	0.00647	0	0	0	0
384435	3863518		DieselExhP	0.00715	0	0	0	0
384435.2	3863543		DieselExhP	0.00822	0	0	0	0
384435.5	3863567		DieselExhP	0.00889	0	0	0	0
384435.7	3863592		DieselExhP	0.00935	0	0	0	0
384435.9	3863616		DieselExhP	0.00971	0	0	0	0
384436.2	3863641		DieselExhP	0.01	0	0	0	0
384436.4	3863665		DieselExhP	0.01023	0	0	0	0
384436.6	3863689		DieselExhP	0.01043	0	0	0	0
384436.9	3863714		DieselExhP	0.01061	0	0	0	0
384437.1	3863738		DieselExhP	0.01075	0	0	0	0
384437.4	3863763		DieselExhP	0.01089	0	0	0	0
384437.6	3863787		DieselExhP	0.01099	0	0	0	0
384437.8	3863812	9901	DieselExhP	0.01107	0	0	0	0

HRA Cancer Risk and Non-Cancer Chronic Risk HARP2 Input								
384438.1	3863836	9901	DieselExhP	0.01114	0	0	0	0
384438.3	3863861	9901	DieselExhP	0.01119	0	0	0	0
384438.5	3863885	9901	DieselExhP	0.01123	0	0	0	0
384438.8	3863909	9901	DieselExhP	0.01127	0	0	0	0
384439	3863934	9901	DieselExhP	0.01128	0	0	0	0
384439.3	3863958	9901	DieselExhP	0.0113	0	0	0	0
384439.5	3863983	9901	DieselExhP	0.01135	0	0	0	0
384439.7	3864007	9901	DieselExhP	0.01131	0	0	0	0
384440	3864032	9901	DieselExhP	0.0113	0	0	0	0
384440.2	3864056	9901	DieselExhP	0.01126	0	0	0	0
384440.4	3864080	9901	DieselExhP	0.01123	0	0	0	0
384440.7	3864105	9901	DieselExhP	0.01118	0	0	0	0
384440.9	3864129	9901	DieselExhP	0.01109	0	0	0	0
384441.2	3864154	9901	DieselExhP	0.01099	0	0	0	0
384441.4	3864178	9901	DieselExhP	0.01083	0	0	0	0
384441.6	3864203	9901	DieselExhP	0.01061	0	0	0	0
384441.9	3864227	9901	DieselExhP	0.01032	0	0	0	0
384442.1	3864252	9901	DieselExhP	0.00992	0	0	0	0
384442.3	3864276	9901	DieselExhP	0.00924	0	0	0	0
384417.7	3864301	9901	DieselExhP	0.00873	0	0	0	0
384392.8	3864301	9901	DieselExhP	0.00934	0	0	0	0
384367.9	3864301	9901	DieselExhP	0.00971	0	0	0	0
384343	3864302	9901	DieselExhP	0.00998	0	0	0	0
384318.1	3864302		DieselExhP	0.0102	0	0	0	0
384293.2	3864302		DieselExhP	0.01034	0	0	0	0
384268.3	3864302		DieselExhP	0.01049	0	0	0	0
384243.4	3864303		DieselExhP	0.01063	0	0	0	0
384218.4	3864303		DieselExhP	0.01075	0	0	0	0
384193.5	3864303		DieselExhP	0.01086	0	0	0	0
384168.6	3864304		DieselExhP	0.01095	0	0	0	0
384143.7	3864304		DieselExhP	0.01102	0	0	0	0
384118.8	3864304		DieselExhP	0.01107	0	0	0	0
384093.9	3864304		DieselExhP	0.01109	0	0	0	0
384069	3864305		DieselExhP	0.01113	0	0	0	0
384044.1	3864305		DieselExhP	0.01121	0	0	0	0
384019.2	3864305		DieselExhP	0.01127	0	0	0	0
383994.3	3864305		DieselExhP	0.0113	0	0	0	0
383969.4	3864306		DieselExhP	0.01133	0	0	0	0
383944.5	3864306		DieselExhP	0.01135	0	0	0	0
383919.6	3864306		DieselExhP	0.01137	0	0	0	0
383894.7	3864307		DieselExhP	0.01138	0	0	0	0
383869.8	3864307		DieselExhP	0.01142	0	0	0	0
383844.9	3864307		DieselExhP	0.01147	0	0	0	0
383820	3864307		DieselExhP	0.01151	0	0	0	0
383795.1	3864308		DieselExhP	0.01152	0	0	0	0
383770.2	3864308	9901	DieselExhP	0.01154	0	0	0	0

HRA Cancer Risk and Non-Cancer Chronic Risk HARP2 Input								
383745.3	3864308	9901	DieselExhP	0.01156	0	0	0	0
383720.4	3864309	9901	DieselExhP	0.01159	0	0	0	0
383695.5	3864309	9901	DieselExhP	0.01163	0	0	0	0
383670.6	3864309	9901	DieselExhP	0.0117	0	0	0	0
383645.7	3864309	9901	DieselExhP	0.01174	0	0	0	0
383620.8	3864310	9901	DieselExhP	0.01176	0	0	0	0
383595.9	3864310	9901	DieselExhP	0.01179	0	0	0	0
383571	3864310	9901	DieselExhP	0.01182	0	0	0	0
383546.1	3864311	9901	DieselExhP	0.01184	0	0	0	0
383521.2	3864311	9901	DieselExhP	0.01187	0	0	0	0
383496.3	3864311	9901	DieselExhP	0.01189	0	0	0	0
383471.4	3864311	9901	DieselExhP	0.01192	0	0	0	0
383446.5	3864312	9901	DieselExhP	0.01195	0	0	0	0
383421.6	3864312	9901	DieselExhP	0.01197	0	0	0	0
383396.7	3864312	9901	DieselExhP	0.01199	0	0	0	0
383371.8	3864313	9901	DieselExhP	0.01201	0	0	0	0
383346.8	3864313	9901	DieselExhP	0.01204	0	0	0	0
383321.9	3864313	9901	DieselExhP	0.01206	0	0	0	0
383297	3864313		DieselExhP	0.01209	0	0	0	0
383272.1	3864314	9901	DieselExhP	0.01212	0	0	0	0
383247.2	3864314		DieselExhP	0.01216	0	0	0	0
383222.3	3864314		DieselExhP	0.0122	0	0	0	0
383197.4	3864315		DieselExhP	0.01224	0	0	0	0
383172.5	3864315		DieselExhP	0.01227	0	0	0	0
383147.6	3864315		DieselExhP	0.01231	0	0	0	0
383122.7	3864315		DieselExhP	0.01234	0	0	0	0
383097.8	3864316		DieselExhP	0.01238	0	0	0	0
383072.9	3864316		DieselExhP	0.01242	0	0	0	0
383048	3864316		DieselExhP	0.01245	0	0	0	0
383023.1	3864317		DieselExhP	0.01249	0	0	0	0
382998.2	3864317		DieselExhP	0.01252	0	0	0	0
382973.3	3864317		DieselExhP	0.01255	0	0	0	0
382948.4	3864317		DieselExhP	0.01257	0	0	0	0
382923.5	3864318		DieselExhP	0.0126	0	0	0	0
382898.6	3864318		DieselExhP	0.01262 0.01265	0	0	0	0
382873.7	3864318		DieselExhP		0	0	0	0
382848.8 382823.9	3864318		DieselExhP DieselExhP	0.01266 0.0127	0	0	0	0
382799	3864319 3864319		DieselExhP	0.0127	0 0	0 0	0 0	0 0
382774.1	3864319		DieselExhP	0.01274	0	0	0	0
382774.1	3864320		DieselExhP	0.01278	0	0	0	0
382743.2	3864320		DieselExhP	0.01282	0	0	0	0
382699.4	3864320		DieselExhP	0.01288	0	0	0	0
382674.5	3864320		DieselExhP	0.01288	0	0	0	0
382649.6	3864321		DieselExhP	0.01291	0	0	0	0
382624.7	3864321		DieselExhP	0.01294	0	0	0	0
JU2U27./	JUU-TJZ1	JJ01	DICOCILATII	0.01230	U	•	9	J

HRA Cancer Risk and Non-Cancer Chronic Risk HARP2 Input								
382599.8	3864321	9901	DieselExhP	0.01303	0	0	0	0
382574.9	3864322	9901	DieselExhP	0.01309	0	0	0	0
382550	3864322	9901	DieselExhP	0.01314	0	0	0	0
382525.1	3864322	9901	DieselExhP	0.01319	0	0	0	0
382500.1	3864322	9901	DieselExhP	0.01324	0	0	0	0
382475.2	3864323	9901	DieselExhP	0.01329	0	0	0	0
382450.3	3864323	9901	DieselExhP	0.01334	0	0	0	0
382425.4	3864323	9901	DieselExhP	0.01339	0	0	0	0
382400.5	3864324	9901	DieselExhP	0.01345	0	0	0	0
382375.6	3864324	9901	DieselExhP	0.01351	0	0	0	0
382350.7	3864324	9901	DieselExhP	0.01357	0	0	0	0
382325.8	3864324	9901	DieselExhP	0.01364	0	0	0	0
382300.9	3864325	9901	DieselExhP	0.01374	0	0	0	0
382276	3864325	9901	DieselExhP	0.01383	0	0	0	0
382251.1	3864325	9901	DieselExhP	0.01393	0	0	0	0
382226.2	3864326	9901	DieselExhP	0.01404	0	0	0	0
382201.3	3864326	9901	DieselExhP	0.01416	0	0	0	0
382176.4	3864326		DieselExhP	0.01431	0	0	0	0
382151.5	3864326		DieselExhP	0.01449	0	0	0	0
382126.6	3864327	9901	DieselExhP	0.0147	0	0	0	0
382101.7	3864327		DieselExhP	0.01494	0	0	0	0
382076.8	3864327		DieselExhP	0.01527	0	0	0	0
382051.9	3864328		DieselExhP	0.01578	0	0	0	0
382027	3864352		DieselExhP	0.01506	0	0	0	0
382027	3864377		DieselExhP	0.01444	0	0	0	0
382027	3864401		DieselExhP	0.01409	0	0	0	0
382027	3864426		DieselExhP	0.01384	0	0	0	0
382027	3864451		DieselExhP	0.01366	0	0	0	0
382027	3864475		DieselExhP	0.01353	0	0	0	0
382027	3864500		DieselExhP	0.0134	0	0	0	0
382027	3864524		DieselExhP	0.01333	0	0	0	0
382027	3864549		DieselExhP	0.01327	0	0	0	0
382027	3864573		DieselExhP	0.01321	0	0	0	0
382027	3864598		DieselExhP	0.01318	0	0	0	0
382027	3864623		DieselExhP	0.01318	0	0	0	0
382027 382027	3864647 3864672		DieselExhP DieselExhP	0.01316 0.01314	0	0	0	0 0
382027	3864696		DieselExhP	0.01314	0 0	0 0	0 0	0
382027	3864721		DieselExhP	0.01317	0	0	0	0
382027	3864745		DieselExhP	0.0132	0	0	0	0
382027	3864770		DieselExhP	0.01317	0	0	0	0
382027	3864770		DieselExhP	0.01322	0	0	0	0
382027	3864819		DieselExhP	0.0132	0	0	0	0
382027	3864844		DieselExhP	0.01317	0	0	0	0
382027	3864868		DieselExhP	0.01317	0	0	0	0
382027	3864893		DieselExhP	0.01314	0	0	0	0
		-			-	-	-	-

	HF	RA Cancer Risk and Non	-Cancer Chr	onic Risk HARP2	Input		
382027	3864917	9901 DieselExhP	0.01316	0	0	0	0
382027	3864942	9901 DieselExhP	0.01312	0	0	0	0
382027	3864966	9901 DieselExhP	0.01305	0	0	0	0
382027	3864991	9901 DieselExhP	0.01294	0	0	0	0
382027	3865015	9901 DieselExhP	0.01284	0	0	0	0
382027	3865040	9901 DieselExhP	0.01258	0	0	0	0
382027	3865065	9901 DieselExhP	0.01222	0	0	0	0
382027	3865089	9901 DieselExhP	0.01165	0	0	0	0
382027	3865114	9901 DieselExhP	0.01077	0	0	0	0

Concentration

			(AVERAGE CONC)	Elevation	Hill Heights	Flagpole	Averagin Period	Source Group			
Х	Υ		[ug/m^3]	(ZELEV)	(ZHILL)	(ZFLAG)	(AVE)	(GRP)	Rank	Net ID	Date (DATE(CON)
	379591.83	3862730.47	1.48881		823.88	•	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379592.07	3862754.91			824.31		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379616.81	3862730.35	1.48552	823.69	823.69		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379592.3	3862779.35	1.48476	824.74	824.74		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379592.54	3862803.79	1.48111	825.2	825.2		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379641.8	3862730.23	1.47933	823.3	823.3		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379592.78	3862828.23			825.69		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379593.02	3862852.67			826.2		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379666.78	3862730.11			822.91		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379593.25	3862877.11			826.63		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379691.76	3862729.99			822.61		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379716.75	3862729.86					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379593.49	3862901.55 3862729.74			827.13		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379741.73 379766.72	3862729.62			822.13 822.06		1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/5/2009 24 hr
	379593.73	3862925.99			827.68		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379791.7	3862729.5			822.06		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379816.68	3862729.38			821.83		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379593.97	3862950.42					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379841.67	3862729.26			821.57		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379866.65	3862729.14	1.43986	821.43	821.43		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379891.63	3862729.02	1.43652	821.18	821.18		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379941.6	3862728.78	1.43357	820.99	820.99		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379916.62	3862728.9	1.43299	820.99	820.99		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379966.58	3862728.65	1.43291	821.02	821.02		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379594.2	3862974.86	1.43254	828.82	828.82		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379991.57	3862728.53	1.42931	820.62	820.62		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380016.55	3862728.41			820.09		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380041.53	3862728.29					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379594.44	3862999.3					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380066.52	3862728.17					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380091.5	3862728.05					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380116.49	3862727.93			818.71		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380141.47 380166.45	3862727.81					1.5 24-HR	ALL	1ST 1ST		1/5/2009 24 hr 1/5/2009 24 hr
	380100.43	3862727.69 3862727.57			817.61		1.5 24-HR 1.5 24-HR	ALL ALL	1ST		1/5/2009 24 hr
	380216.42	3862727.44					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380241.4	3862727.32					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379594.68	3863023.74					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380266.39	3862727.2					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380291.37	3862727.08	1.39459	816.25	816.25		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380516.22	3862725.99	1.39321	816.33	816.33		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380541.21	3862725.87	1.39321	816.34	816.34		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380566.19	3862725.75	1.39293	816.16	816.16		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380316.35	3862726.96					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380491.24	3862726.11					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380341.34	3862726.84					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380366.32	3862726.72					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380391.31 380466.26	3862726.6 3862726.23					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/5/2009 24 hr
	380591.17	3862725.63					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380441.27	3862726.35					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380416.29	3862726.48					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380616.16	3862725.51					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380641.14	3862725.39			815.3		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380666.13	3862725.27	1.38758	815	815		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380691.11	3862725.14	1.38597	814.63	814.63		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380716.09	3862725.02	1.38439	814.25	814.25		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380741.08	3862724.9		813.94	813.94		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380766.06	3862724.78			813.75		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380791.04	3862724.66			813.55		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380816.03	3862724.54					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380841.01	3862724.42					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380865.99	3862724.3			812.61		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380890.98 380915.96	3862724.18 3862724.06			812.44 812.31		1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr
	380915.96	3862723.93			812.31 812.11		1.5 24-HR 1.5 24-HR	ALL	1ST		1/5/2009 24 hr 1/5/2009 24 hr
	380940.94	3862723.93			812.11		1.5 24-HR	ALL	151 1ST		1/5/2009 24 hr
	379594.91	3863048.18					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380990.91	3862723.69			811.61		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381015.9	3862723.57			811.39		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381040.88	3862723.45					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381065.86	3862723.33	1.36784				1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381090.85	3862723.21	1.36467		810.59		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381115.83	3862723.09	1.36085	810.47	810.47		1.5 24-HR	ALL	1ST		1/5/2009 24 hr

PM: Concentration						PM10 Analysi	S				
				Elevation	Hill Heights	Flagpole	Averagin Period	Source Group			
Χ	Υ		[ug/m^3]		(ZHILL)	(ZFLAG)	(AVE)	(GRP)	Rank	Net ID	Date (DATE(CON)
	381140.81	3862722.97	1.35575	810.42	810.42	1.5	24-HR	ALL	1ST		1/5/2009 24 hr
	381165.8	3862722.85			810.35		24-HR	ALL	1ST		1/5/2009 24 hr
	379595.15	3863072.62			830.9		24-HR	ALL	1ST		1/5/2009 24 hr
	381190.78 381215.76	3862722.72 3862722.6			810.33 810.4		24-HR 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/5/2009 24 hr
	379595.39	3863097.06			831.41		24-HR	ALL	1ST		1/5/2009 24 hr
	381240.75	3862722.48			810.47		24-HR	ALL	1ST		1/5/2009 24 hr
	381265.73	3862722.36			810.53		24-HR	ALL	1ST		1/5/2009 24 hr
	379595.63	3863121.5	1.29185	831.9	831.9	1.5	24-HR	ALL	1ST		1/5/2009 24 hr
	384441.38	3864178.21	1.28892		816		24-HR	ALL	1ST		1/27/2009 24 hr
	384440.91	3864129.33	1.28867		815.32		24-HR	ALL	1ST		1/27/2009 24 hr
	381290.72 384440.67	3862722.24 3864104.89	1.28838 1.28837		810.74 814.85		24-HR 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/27/2009 24 hr
	384441.15	3864153.77			815.76		24-HR	ALL	1ST		1/27/2009 24 hr
	384440.43	3864080.46			814.39		24-HR	ALL	1ST		1/27/2009 24 hr
	384440.2	3864056.02	1.28546		813.71	1.5	24-HR	ALL	1ST		1/27/2009 24 hr
	384439.96	3864031.58	1.28426	813.31	813.31	1.5	24-HR	ALL	1ST		1/27/2009 24 hr
	384441.62	3864202.65	1.28426		816.21		24-HR	ALL	1ST		1/27/2009 24 hr
	384439.72	3864007.14	1.28246		813.01		24-HR	ALL	1ST		1/27/2009 24 hr
	384439.49 384441.86	3863982.7 3864227.09	1.27969 1.27952		812.69 816.37		24-HR 24-HR	ALL ALL	1ST 1ST		1/27/2009 24 hr 1/27/2009 24 hr
	384439.25	3863958.26			810.37		24-HR	ALL	1ST		1/27/2009 24 hr
	384442.1	3864251.53	1.2734		816.45		24-HR	ALL	1ST		1/27/2009 24 hr
	382015.24	3863333.39	1.27335		815.59		24-HR	ALL	1ST		1/5/2009 24 hr
	381315.7	3862722.12	1.27092	810.82	810.82	1.5	24-HR	ALL	1ST		1/5/2009 24 hr
	384439.01	3863933.82	1.26984		811.92		24-HR	ALL	1ST		1/27/2009 24 hr
	384442.33	3864275.97	1.26583		816.48		24-HR	ALL	1ST		1/27/2009 24 hr
	384438.77	3863909.38	1.26434		811.97		24-HR	ALL	1ST		1/27/2009 24 hr
	384218.44 384342.96	3864302.95 3864301.54	1.26299 1.26298		818.79 816.41		24-HR 24-HR	ALL ALL	1ST 1ST		1/27/2009 24 hr 1/27/2009 24 hr
	384243.35	3864302.67			818.13		24-HR	ALL	1ST		1/27/2009 24 hr
	384318.06	3864301.82			816.63		24-HR	ALL	1ST		1/27/2009 24 hr
	384367.86	3864301.26	1.26184	816.04	816.04	1.5	24-HR	ALL	1ST		1/27/2009 24 hr
	384392.76	3864300.97			816.05		24-HR	ALL	1ST		1/27/2009 24 hr
	384193.54	3864303.23			819.17		24-HR	ALL	1ST		1/27/2009 24 hr
	379595.86	3863145.94			832.36 817.37		24-HR	ALL	1ST		1/5/2009 24 hr
	384268.25 384293.15	3864302.39 3864302.1			817.37		24-HR 24-HR	ALL ALL	1ST 1ST		1/27/2009 24 hr 1/27/2009 24 hr
	384168.64	3864303.52			819.36		24-HR	ALL	1ST		1/27/2009 24 hr
	380406.16	3863548.72			830.28		24-HR	ALL	1ST		1/5/2009 24 hr
	384417.67	3864300.69	1.25794	816.31	816.31	1.5	24-HR	ALL	1ST		1/27/2009 24 hr
	384438.54	3863884.94			811.9		24-HR	ALL	1ST		1/27/2009 24 hr
	384143.74	3864303.8			819.29		24-HR	ALL	1ST		1/27/2009 24 hr
	379539.8 381340.68	3862794.96 3862722			825.56 810.48		24-HR 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/5/2009 24 hr
	384118.83	3864304.08			818.99		24-HR	ALL	1ST		1/27/2009 24 hr
	384438.3	3863860.5			811.79		24-HR	ALL	1ST		1/27/2009 24 hr
	384093.93	3864304.36	1.24169	818.51	818.51	1.5	24-HR	ALL	1ST		1/27/2009 24 hr
	384442.57	3864300.41	1.24157		816.59		24-HR	ALL	1ST		1/27/2009 24 hr
	384069.03	3864304.65			818.41		24-HR	ALL	1ST		1/27/2009 24 hr
	384044.12 384019.22	3864304.93 3864305.21			819.08 819.49		24-HR 24-HR	ALL ALL	1ST 1ST		1/27/2009 24 hr 1/27/2009 24 hr
	379542.54	3862885.33			827.35		24-HR	ALL	1ST		1/5/2009 24 hr
	381365.67	3862721.88			810.04		24-HR	ALL	1ST		1/5/2009 24 hr
	383994.32	3864305.49			819.42		24-HR	ALL	1ST		1/27/2009 24 hr
	379596.1	3863170.38			832.79		24-HR	ALL	1ST		1/5/2009 24 hr
	384438.06	3863836.06			811.78		24-HR	ALL	1ST		1/27/2009 24 hr
	383969.42 383944.51	3864305.78 3864306.06			819.27 818.99		24-HR 24-HR	ALL ALL	1ST		1/27/2009 24 hr
	381390.65	3862721.76					24-HR	ALL	1ST 1ST		1/27/2009 24 hr 1/5/2009 24 hr
	382038.73	3863332.41			815.5		24-HR	ALL	1ST		1/5/2009 24 hr
	383919.61	3864306.34			818.83		24-HR	ALL	1ST		1/27/2009 24 hr
	382062.22	3863331.43			815.3		24-HR	ALL	1ST		1/5/2009 24 hr
	384437.82	3863811.62			811.67		24-HR	ALL	1ST		1/27/2009 24 hr
	383894.71	3864306.62			818.5		24-HR	ALL	1ST		1/27/2009 24 hr
	380405.91 383869.8	3863573.43 3864306.91			830.61 818.72		24-HR 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/27/2009 24 hr
	381415.63	3862721.63					24-nk 24-HR	ALL	1ST		1/5/2009 24 hr
	383844.9	3864307.19					24-HR	ALL	1ST		1/27/2009 24 hr
	379596.34	3863194.82			833.21		24-HR	ALL	1ST		1/5/2009 24 hr
	382085.71	3863330.46			815		24-HR	ALL	1ST		1/5/2009 24 hr
	383820	3864307.47					24-HR	ALL	1ST		1/27/2009 24 hr
	383795.09	3864307.75			819.29 815.00		24-HR	ALL	1ST		1/27/2009 24 hr
	382109.2 383770.19	3863329.48 3864308.04			815.09 819.27		24-HR 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/27/2009 24 hr
	202.70.13	220 1300.04	1.1/0/2	013.27	313.27	1.5	<u></u>	·			_, _ , _ 2003

PN Concentration							is				
			(AVERAGE CONC)	Elevation	Hill Heights	Flagpole	Averagin Period	Source Group			
Χ	Υ		[ug/m^3]	(ZELEV)	(ZHILL)	(ZFLAG)	(AVE)	(GRP)	Rank	Net ID	Date (DATE(CON)
	381440.62	3862721.51	1.17628		810.01	= -	5 24-HR	ALL	1ST		1/5/2009 24 hr
	384437.59	3863787.18	1.17413	811.74	811.74	1.5	5 24-HR	ALL	1ST		1/27/2009 24 hr
	383745.29	3864308.32	1.1739	819.37	819.37	1.5	5 24-HR	ALL	1ST		1/27/2009 24 hr
	383720.39	3864308.6	1.17001	819.63	819.63	1.5	5 24-HR	ALL	1ST		1/27/2009 24 hr
	383670.58	3864309.17	1.16874	821.19	821.19	1.5	5 24-HR	ALL	1ST		1/27/2009 24 hr
	383695.48	3864308.88	1.16836	820.25	820.25	1.5	5 24-HR	ALL	1ST		1/27/2009 24 hr
	382132.69	3863328.5		815.32			5 24-HR	ALL	1ST		1/5/2009 24 hr
	380405.67	3863598.15	1.16505	830.95			5 24-HR	ALL	1ST		1/5/2009 24 hr
	383645.68	3864309.45	1.16503	821.49			5 24-HR	ALL	1ST		1/27/2009 24 hr
	384136.23	3863498.97					5 24-HR	ALL	1ST		12/23/2013 24 hr
	384161.11	3863498.55	1.16291	807.86			5 24-HR	ALL	1ST		12/23/2013 24 hr
	384061.61	3863500.23	1.16254	808.2			5 24-HR	ALL	1ST		12/23/2013 24 hr
	384111.36 384086.48	3863499.39 3863499.81	1.16242 1.16232	807.95 808.08			5 24-HR 5 24-HR	ALL ALL	1ST 1ST		12/23/2013 24 hr 12/23/2013 24 hr
	384185.98	3863498.13	1.16144	807.85			5 24-HR	ALL	1ST		12/23/2013 24 hr
	384011.86	3863501.08	1.16083	808.64			5 24-HR	ALL	1ST		12/23/2013 24 hr
	384036.73	3863500.65	1.16083	808.23			5 24-HR	ALL	1ST		12/23/2013 24 hr
	383986.98	3863501.5	1.16056	809.04			5 24-HR	ALL	1ST		12/23/2013 24 hr
	383620.77	3864309.73	1.15969	821.62			5 24-HR	ALL	1ST		1/27/2009 24 hr
	381465.6	3862721.39	1.15968				5 24-HR	ALL	1ST		1/5/2009 24 hr
	384210.86	3863497.7	1.15879	807.96			5 24-HR	ALL	1ST		12/23/2013 24 hr
	383962.1	3863501.92	1.15865	809.12	809.12	1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	384235.74	3863497.28	1.15857	808.07	808.07	1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	381490.58	3862721.27	1.15843	809.86	809.86	1.5	5 24-HR	ALL	1ST		12/16/2013 24 hr
	383937.23	3863502.34	1.15767	808.88	808.88	1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	381590.52	3862720.79	1.1573	809.79	809.79	1.5	5 24-HR	ALL	1ST		12/16/2013 24 hr
	381515.57	3862721.15	1.15722	809.77	809.77		5 24-HR	ALL	1ST		12/16/2013 24 hr
	381615.5	3862720.67	1.157				5 24-HR	ALL	1ST		12/16/2013 24 hr
	381540.55	3862721.03	1.15655				5 24-HR	ALL	1ST		12/16/2013 24 hr
	383912.35	3863502.76					5 24-HR	ALL	1ST		12/23/2013 24 hr
	379596.58	3863219.26		833.57			5 24-HR	ALL	1ST		1/5/2009 24 hr
	384260.61	3863496.86					5 24-HR	ALL	1ST		12/23/2013 24 hr
	381565.54	3862720.91					5 24-HR	ALL	1ST		12/16/2013 24 hr
	383595.87	3864310.01	1.15506				5 24-HR	ALL	1ST		1/27/2009 24 hr
	383887.48 381640.49	3863503.18 3862720.55		809.51			5 24-HR 5 24-HR	ALL ALL	1ST 1ST		12/23/2013 24 hr 12/16/2013 24 hr
	383862.6	3863503.61					5 24-HR	ALL	1ST		12/23/2013 24 hr
	384285.49	3863496.44					5 24-HR	ALL	1ST		12/23/2013 24 hr
	381665.47	3862720.42					5 24-HR	ALL	1ST		12/16/2013 24 hr
	383837.73	3863504.03	1.15199				5 24-HR	ALL	1ST		12/23/2013 24 hr
	383812.85	3863504.45		809.41			5 24-HR	ALL	1ST		12/23/2013 24 hr
	383570.97	3864310.3	1.14994				5 24-HR	ALL	1ST		1/27/2009 24 hr
	384310.36	3863496.02	1.14961	809.21	809.21	1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	381690.45	3862720.3	1.14811	809.32	809.32	1.5	5 24-HR	ALL	1ST		12/16/2013 24 hr
	383787.98	3863504.87	1.148	809.6	809.6	1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	383713.35	3863506.13	1.14609	812.16	812.16	1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	383763.1	3863505.29	1.14556	810.04	810.04	1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	383546.07	3864310.58					5 24-HR	ALL	1ST		1/27/2009 24 hr
	381715.44	3862720.18					5 24-HR	ALL	1ST		12/16/2013 24 hr
	383738.22	3863505.71		810.87			5 24-HR	ALL	1ST		12/23/2013 24 hr
	383688.47	3863506.56		812.84			5 24-HR	ALL	1ST		12/23/2013 24 hr
	384335.24 383663.6	3863495.6					5 24-HR	ALL	1ST		12/23/2013 24 hr
		3863506.98		813.04			5 24-HR	ALL	1ST		12/23/2013 24 hr
	381740.42 382156.18	3862720.06 3863327.52		809.11 815.24			5 24-HR 5 24-HR	ALL ALL	1ST 1ST		12/16/2013 24 hr 1/5/2009 24 hr
	383521.16	3864310.86					5 24-HR	ALL	1ST		1/27/2009 24 hr
	384437.35	3863762.74					5 24-HR	ALL	1ST		1/27/2009 24 hr
	383638.72	3863507.4	1.13918	813.14			5 24-HR	ALL	1ST		12/23/2013 24 hr
	381765.4	3862719.94	1.13915	809.28			5 24-HR	ALL	1ST		12/16/2013 24 hr
	383496.26	3864311.14					5 24-HR	ALL	1ST		1/27/2009 24 hr
	383613.85	3863507.82					5 24-HR	ALL	1ST		12/23/2013 24 hr
	381790.39	3862719.82					5 24-HR	ALL	1ST		12/16/2013 24 hr
	380405.42	3863622.86	1.13397	831.29	831.29	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	384360.11	3863495.17	1.13302	809.07	809.07	1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	383588.97	3863508.24					5 24-HR	ALL	1ST		12/23/2013 24 hr
	381815.37	3862719.7					5 24-HR	ALL	1ST		12/16/2013 24 hr
	383564.1	3863508.66					5 24-HR	ALL	1ST		12/23/2013 24 hr
	383471.36	3864311.43					5 24-HR	ALL	1ST		1/27/2009 24 hr
	382418.49	3863525.23	1.12909				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383539.22	3863509.09					5 24-HR	ALL	1ST		12/23/2013 24 hr
	383446.45	3864311.71					5 24-HR	ALL	1ST		1/27/2009 24 hr
	383514.35	3863509.51					5 24-HR 5 24-HP	ALL	1ST		12/23/2013 24 hr
	381840.35 383489.47	3862719.58 3863509.93					5 24-HR 5 24-HR	ALL ALL	1ST 1ST		12/16/2013 24 hr 12/23/2013 24 hr
	380381.72	3863548.36					5 24-HR	ALL	1ST		1/5/2009 24 hr
	300001.72	55555-70.50	1.120//	030.03	050.05	1.0			-01		1,5,2003 ZTIII

Concentration

			Concentration	Elevation	Hill Hoights	Flagnola	Averagin Beried	Source Croup			
Х	Υ		(AVERAGE CONC) [ug/m^3]		Hill Heights (ZHILL)	Flagpole (ZFLAG)	Averagin Period (AVE)	Source Group (GRP)	Rank	Net ID	Date (DATE(CON)
^	383421.55	3864311.99	1.11977	-	-		5 24-HR	ALL	1ST	Netro	1/27/2009 24 hr
	381865.34	3862719.46					5 24-HR	ALL	1ST		12/16/2013 24 hr
	379596.81	3863243.7	1.11853				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383464.59	3863510.35	1.11779	813.79	813.79	1.	5 24-HR	ALL	1ST		12/23/2013 24 hr
	384384.99	3863494.75	1.116	808.75	808.75	1.	5 24-HR	ALL	1ST		12/23/2013 24 hr
	382532.03	3863415.61	1.11463	814.14	814.14	1.	5 24-HR	ALL	1ST		1/5/2009 24 hr
	383396.65	3864312.27	1.11459				5 24-HR	ALL	1ST		1/27/2009 24 hr
	382556.17	3863415.61	1.11414				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383439.72	3863510.77	1.11396				5 24-HR	ALL	1ST		12/23/2013 24 hr
	382015.24	3863308.8	1.11311				5 24-HR	ALL	1ST		1/5/2009 24 hr
	382580.32	3863415.61	1.11276				5 24-HR	ALL	1ST		1/5/2009 24 hr
	382604.46	3863415.61	1.11107				5 24-HR	ALL	1ST		1/5/2009 24 hr
	381890.32 383414.84	3862719.34 3863511.19	1.11062 1.11052				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		12/16/2013 24 hr 12/23/2013 24 hr
	383371.75	3864312.56	1.11032				5 24-HR	ALL	1ST		1/27/2009 24 hr
	382628.6	3863415.61	1.10852				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383389.97	3863511.61	1.10711				5 24-HR	ALL	1ST		12/23/2013 24 hr
	382817.83	3863521.31	1.10705				5 24-HR	ALL	1ST		1/5/2009 24 hr
	382179.67	3863326.54	1.10521				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383365.09	3863512.04	1.10442				5 24-HR	ALL	1ST		12/23/2013 24 hr
	380405.18	3863647.58	1.10423	831.65	831.65	1.	5 24-HR	ALL	1ST		1/5/2009 24 hr
	383340.22	3863512.46	1.10319	814.55	814.55	1.	5 24-HR	ALL	1ST		12/23/2013 24 hr
	383346.84	3864312.84	1.10311	823.7	823.7	1.	5 24-HR	ALL	1ST		1/27/2009 24 hr
	382652.74	3863415.61	1.10269				5 24-HR	ALL	1ST		1/5/2009 24 hr
	382528.11	3863435.18	1.10243				5 24-HR	ALL	1ST		1/5/2009 24 hr
	382440.3	3863524.11	1.10243				5 24-HR	ALL	1ST		1/5/2009 24 hr
	381915.31	3862719.21	1.10204				5 24-HR	ALL	1ST		12/16/2013 24 hr
	384437.11	3863738.3	1.10169		811.67		5 24-HR	ALL	1ST		2/1/2013 24 hr
	383315.34	3863512.88	1.10028				5 24-HR	ALL	1ST		12/23/2013 24 hr
	384436.88 383321.94	3863713.86 3864313.12	1.09859 1.09766				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		2/1/2013 24 hr 1/27/2009 24 hr
	383290.47	3863513.3	1.09786				5 24-HR	ALL	1ST		12/23/2013 24 hr
	383265.59	3863513.72	1.09476				5 24-HR	ALL	1ST		12/23/2013 24 hr
	382538.88	3863455.74	1.09458				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383297.04	3864313.4	1.09311				5 24-HR	ALL	1ST		1/27/2009 24 hr
	382462.12	3863522.99	1.09248				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383240.71	3863514.14	1.09236	816.01	816.01	1.	5 24-HR	ALL	1ST		12/23/2013 24 hr
	384436.64	3863689.43	1.09062	811.1	811.1	1.	5 24-HR	ALL	1ST		2/1/2013 24 hr
	383215.84	3863514.57	1.09011	816.43	816.43	1.	5 24-HR	ALL	1ST		12/23/2013 24 hr
	382676.89	3863415.61	1.0881	813.56	813.56	1.	5 24-HR	ALL	1ST		1/5/2009 24 hr
	383272.13	3864313.69	1.08775				5 24-HR	ALL	1ST		1/27/2009 24 hr
	381940.29	3862719.09	1.08762				5 24-HR	ALL	1ST		12/16/2013 24 hr
	383190.96	3863514.99	1.08702				5 24-HR	ALL	1ST		12/23/2013 24 hr
	382549.65	3863476.29	1.08696				5 24-HR	ALL	1ST		1/5/2009 24 hr
	382483.93 384409.86	3863521.87 3863494.33	1.08613 1.08535				5 24-HR	ALL	1ST 1ST		1/5/2009 24 hr
	382842.71	3863520.89	1.08471				5 24-HR 5 24-HR	ALL ALL	1ST		12/23/2013 24 hr 1/5/2009 24 hr
	383166.09	3863515.41	1.08367				5 24-HR	ALL	1ST		12/23/2013 24 hr
	383247.23	3864313.97	1.08268				5 24-HR	ALL	1ST		1/27/2009 24 hr
	382505.74	3863520.76	1.08147				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383141.21	3863515.83	1.08043				5 24-HR	ALL	1ST		12/23/2013 24 hr
	382560.41	3863496.84	1.0801	814.88	814.88		5 24-HR	ALL	1ST		1/5/2009 24 hr
	379597.05	3863268.14	1.07914	834.34	834.34	1.	5 24-HR	ALL	1ST		1/5/2009 24 hr
	383222.33	3864314.25	1.07899	825.19	825.19	1.	5 24-HR	ALL	1ST		1/27/2009 24 hr
	382527.55	3863519.64	1.07771				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383116.34	3863516.25	1.07695				5 24-HR	ALL	1ST		12/23/2013 24 hr
	384436.4	3863664.99	1.07626				5 24-HR	ALL	1ST		2/1/2013 24 hr
	380404.93	3863672.29	1.07462				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383197.43	3864314.53 3863518.52	1.0746				5 24-HR	ALL	1ST		1/27/2009 24 hr
	382549.37 382867.58	3863520.47	1.07454 1.07437				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/5/2009 24 hr
	383091.46	3863516.67	1.07263				5 24-HR	ALL	1ST		12/23/2013 24 hr
	382571.18	3863517.4	1.07222				5 24-HR	ALL	1ST		1/5/2009 24 hr
	381965.27	3862718.97	1.06972				5 24-HR	ALL	1ST		12/16/2013 24 hr
	383172.52	3864314.82	1.06835				5 24-HR	ALL	1ST		1/27/2009 24 hr
	383066.59	3863517.09	1.06827				5 24-HR	ALL	1ST		12/23/2013 24 hr
	382892.46	3863520.05	1.06775				5 24-HR	ALL	1ST		1/5/2009 24 hr
	382406.35	3863504.87	1.06586	816.11	816.11	1.	5 24-HR	ALL	1ST		1/27/2009 24 hr
	383041.71	3863517.52	1.06359				5 24-HR	ALL	1ST		12/23/2013 24 hr
	382917.33	3863519.62	1.0629				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383147.62	3864315.1					5 24-HR	ALL	1ST		1/27/2009 24 hr
	382701.03	3863415.61	1.06085				5 24-HR	ALL	1ST		1/5/2009 24 hr
	381226.56	3864600.75					5 24-HR	ALL	1ST		1/5/2009 24 hr
	381226.48 382942.21	3864576.14 3863519.2	1.05976 1.05946				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/5/2009 24 hr
	JUZJ#Z.ZI	5003313.2	1.05540	013.43	013.43	1.	5 24-HR	7111	131		1/3/2003 Z4 III

P Concentration							IS				
			(AVERAGE CONC)	Elevation	Hill Heights	Flagpole	Averagin Period	Source Group			
Χ	Υ		[ug/m^3]	(ZELEV)	(ZHILL)	(ZFLAG)	(AVE)	(GRP)	Rank	Net ID	Date (DATE(CON)
	381226.64	3864625.36	1.05938	836.38	836.38	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	381226.4	3864551.53	1.05935				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383016.83	3863517.94	1.05836				5 24-HR	ALL	1ST		12/23/2013 24 hr
	382203.16	3863325.56					5 24-HR	ALL	1ST		1/5/2009 24 hr
	382967.08 381226.32	3863518.78 3864526.92	1.05711 1.05655				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/5/2009 24 hr
	382991.96	3863518.36					5 24-HR	ALL	1ST		1/5/2009 24 hr
	382394.22	3863484.51	1.05509				5 24-HR	ALL	1ST		1/27/2009 24 hr
	384436.16	3863640.55	1.05287				5 24-HR	ALL	1ST		2/1/2013 24 hr
	381226.72	3864649.96	1.05259	836.69	836.69	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	381226.24	3864502.31	1.05247	834.96	834.96	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	383122.72	3864315.38	1.05243		825.81		5 24-HR	ALL	1ST		1/27/2009 24 hr
	381226.16	3864477.7	1.04766				5 24-HR	ALL	1ST		1/5/2009 24 hr
	381226.8 382382.08	3864674.57 3863464.16	1.04586 1.04517				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/27/2009 24 hr
	380404.69	3863697	1.04317				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383097.81	3864315.66	1.0444				5 24-HR	ALL	1ST		1/27/2009 24 hr
	381224.4	3863936.31	1.0418				5 24-HR	ALL	1ST		1/5/2009 24 hr
	381226.08	3864453.09	1.04178	834.38	834.38	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	379597.29	3863292.58	1.03902	834.78	834.78	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	381226.88	3864699.18	1.03842		837.19		5 24-HR	ALL	1ST		1/5/2009 24 hr
	383072.91	3864315.95	1.03819		826.11		5 24-HR	ALL	1ST		1/27/2009 24 hr
	382369.94 381226	3863443.8 3864428.49	1.03662 1.03633		815.71 834.11		5 24-HR 5 24-HR	ALL ALL	1ST 1ST		1/27/2009 24 hr 1/5/2009 24 hr
	381990.26	3862718.85	1.03299				5 24-HR	ALL	1ST		12/16/2013 24 hr
	383048.01	3864316.23	1.03226				5 24-HR	ALL	1ST		1/27/2009 24 hr
	381226.96	3864723.79	1.03184		837.44		5 24-HR	ALL	1ST		1/5/2009 24 hr
	381225.92	3864403.88	1.03075	833.82	833.82	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	382357.8	3863423.44	1.02747	815.74	815.74	1.5	5 24-HR	ALL	1ST		1/27/2009 24 hr
	381227.04	3864748.4	1.02667				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380357.28	3863548.01	1.0266				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383023.11	3864316.51					5 24-HR	ALL	1ST		1/27/2009 24 hr 12/20/2012 24 hr
	381224.48 382226.65	3863960.92 3863324.58					5 24-HR 5 24-HR	ALL ALL	1ST 1ST		12/20/2012 24 hr 12/23/2013 24 hr
	381225.84	3864379.27					5 24-HR	ALL	1ST		1/5/2009 24 hr
	382015.24	3863284.22	1.02346				5 24-HR	ALL	1ST		1/5/2009 24 hr
	382725.17	3863415.61	1.02281	815.17	815.17	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	381224.56	3863985.53	1.01891	828.39	828.39	1.5	5 24-HR	ALL	1ST		12/20/2012 24 hr
	384435.93	3863616.11	1.01799				5 24-HR	ALL	1ST		2/1/2013 24 hr
	381225.76	3864354.66					5 24-HR	ALL	1ST		1/5/2009 24 hr
	382998.2 381227.12	3864316.79 3864773.01					5 24-HR 5 24-HR	ALL ALL	1ST 1ST		1/27/2009 24 hr 1/5/2009 24 hr
	382345.67	3863403.08	1.01313				5 24-HR	ALL	1ST		1/27/2009 24 hr
	381224.64	3864010.14	1.01414				5 24-HR	ALL	1ST		12/20/2012 24 hr
	380404.45	3863721.72					5 24-HR	ALL	1ST		1/5/2009 24 hr
	381225.68	3864330.05	1.01205	832.74	832.74	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	382250.14	3863323.61					5 24-HR	ALL	1ST		12/23/2013 24 hr
	381224.72	3864034.75					5 24-HR	ALL	1ST		12/20/2012 24 hr
	382973.3	3864317.08	1.00831				5 24-HR	ALL	1ST		1/27/2009 24 hr
	381225.6 382818.61	3864305.44 3863500.17	1.00753 1.00454				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/27/2009 24 hr
	381225.52	3864280.83	1.00378				5 24-HR	ALL	1ST		1/5/2009 24 hr
	381224.8	3864059.35					5 24-HR	ALL	1ST		12/20/2012 24 hr
	381225.44	3864256.22	1.00205				5 24-HR	ALL	1ST		1/5/2009 24 hr
	384434.74	3863493.91	1.00169	808.28	808.28	1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	384434.98	3863518.35					5 24-HR	ALL	1ST		12/23/2013 24 hr
	382948.4	3864317.36					5 24-HR	ALL	1ST		1/27/2009 24 hr
	381225.36	3864231.62	1.00047				5 24-HR	ALL	1ST		1/5/2009 24 hr
	381224.88 379597.52	3864083.96 3863317.02	0.99882 0.99837				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		12/20/2012 24 hr 1/5/2009 24 hr
	381225.28	3864207.01					5 24-HR	ALL	1ST		1/5/2009 24 hr
	384435.21	3863542.79					5 24-HR	ALL	1ST		12/23/2013 24 hr
	381225.2	3864182.4					5 24-HR	ALL	1ST		1/5/2009 24 hr
	381224.96	3864108.57	0.99537	830.06	830.06	1.5	5 24-HR	ALL	1ST		12/20/2012 24 hr
	384435.45	3863567.23					5 24-HR	ALL	1ST		12/23/2013 24 hr
	381225.12	3864157.79					5 24-HR	ALL	1ST		1/5/2009 24 hr
	381227.2	3864797.62					5 24-HR	ALL	1ST		1/5/2009 24 hr
	381225.04 382923.49	3864133.18 3864317.64					5 24-HR 5 24-HR	ALL ALL	1ST		1/5/2009 24 hr
	382923.49 384435.69	3863591.67					5 24-HR 5 24-HR	ALL	1ST 1ST		1/27/2009 24 hr 12/23/2013 24 hr
	382333.53	3863391.07					5 24-HR	ALL	1ST		1/27/2009 24 hr
	382273.63	3863322.63					5 24-HR	ALL	1ST		12/23/2013 24 hr
	382898.59	3864317.92					5 24-HR	ALL	1ST		1/27/2009 24 hr
	380404.2	3863746.43	0.97996				5 24-HR	ALL	1ST		1/5/2009 24 hr
	382749.31	3863415.61	0.97577	815.09	815.09	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr

P Concentration						PM10 Analysis	S				
			(AVERAGE CONC)	Elevation	Hill Heights	Flagpole	Averagin Period	Source Group			
Χ	Υ		[ug/m^3]		(ZHILL)		(AVE)	(GRP)	Rank	Net ID	Date (DATE(CON)
	382873.69	3864318.21	0.97501	827	827	1.5	24-HR	ALL	1ST		1/27/2009 24 hr
	382819.39	3863479.03	0.96856		815.44		24-HR	ALL	1ST		1/27/2009 24 hr
	380332.84	3863547.65			831.5		24-HR	ALL	1ST		1/5/2009 24 hr
	382848.79 379597.76	3864318.49 3863341.45			826.98 835.82		24-HR 24-HR	ALL ALL	1ST 1ST		1/27/2009 24 hr 1/5/2009 24 hr
	381227.28	3864822.23	0.95885		838.52		24-HR	ALL	1ST		1/5/2009 24 hr
	381952.11	3865138.6			839.57		24-HR	ALL	1ST		12/18/2013 24 hr
	382823.88	3864318.77			826.97		24-HR	ALL	1ST		1/27/2009 24 hr
	381797.92	3862684.14	0.95686	809.23	809.23	1.5	24-HR	ALL	1ST		12/16/2013 24 hr
	382015.24	3863259.63	0.95588	814.73	814.73	1.5	24-HR	ALL	1ST		1/5/2009 24 hr
	381927.16	3865138.72			839.62		24-HR	ALL	1ST		12/18/2013 24 hr
	381977.07	3865138.47			839.62		24-HR	ALL	1ST		12/18/2013 24 hr
	382798.98 381902.2	3864319.05 3865138.84			827.13 839.67		24-HR 24-HR	ALL ALL	1ST 1ST		1/27/2009 24 hr 12/18/2013 24 hr
	380403.95	3863771.14			833.95		24-HR	ALL	1ST		1/5/2009 24 hr
	381877.24	3865138.96			839.64		24-HR	ALL	1ST		12/18/2013 24 hr
	382015.24	3863235.04			814.45		24-HR	ALL	1ST		1/27/2009 24 hr
	382774.08	3864319.34	0.94082	827.26	827.26	1.5	24-HR	ALL	1ST		1/27/2009 24 hr
	381852.28	3865139.09			839.57		24-HR	ALL	1ST		12/18/2013 24 hr
	382002.03	3865138.35			839.68		24-HR	ALL	1ST		12/18/2013 24 hr
	382026.99	3865015.44			838.2		24-HR	ALL	1ST		12/18/2013 24 hr
	382026.99 382026.99	3864990.88 3865040			837.88 838.46		24-HR 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 12/18/2013 24 hr
	382020.99	3863210.46			814.18		24-HR	ALL	1ST		1/27/2009 24 hr
	382321.39	3863362.37			815.14		24-HR	ALL	1ST		1/27/2009 24 hr
	382749.17	3864319.62			827.4		24-HR	ALL	1ST		1/27/2009 24 hr
	381827.32	3865139.21	0.93247	839.54	839.54	1.5	24-HR	ALL	1ST		12/18/2013 24 hr
	382026.99	3865064.56	0.93106	838.75	838.75	1.5	24-HR	ALL	1ST		12/18/2013 24 hr
	382015.24	3862718.73			808.71		24-HR	ALL	1ST		12/23/2013 24 hr
	382015.24	3862743.32			808.94		24-HR	ALL	1ST		12/23/2013 24 hr
	382820.18 382015.24	3863457.89 3862767.9			815.05 809.15		24-HR 24-HR	ALL ALL	1ST 1ST		2/1/2013 24 hr 12/23/2013 24 hr
	382015.24	3864966.32			837.6		24-HR	ALL	1ST		12/18/2013 24 hr
	382015.24	3863185.87			813.93		24-HR	ALL	1ST		1/27/2009 24 hr
	382015.24	3862792.49			809.37		24-HR	ALL	1ST		12/23/2013 24 hr
	382724.27	3864319.9	0.92341	827.43	827.43	1.5	24-HR	ALL	1ST		1/27/2009 24 hr
	381227.36	3864846.83			838.79		24-HR	ALL	1ST		1/5/2009 24 hr
	379598	3863365.89			836.35		24-HR	ALL	1ST		1/5/2009 24 hr
	382026.99 382015.24	3864941.76 3862817.08			837.36 809.58		24-HR 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr
	382026.99	3865089.11			839.05		24-HR	ALL	1ST		12/23/2013 24 hr 12/18/2013 24 hr
	381199.49	3863936.55			828.08		24-HR	ALL	1ST		1/5/2009 24 hr
	382015.24	3863161.29	0.9161		813.7	1.5	24-HR	ALL	1ST		1/27/2009 24 hr
	382026.99	3864917.21	0.91437	837.11	837.11	1.5	24-HR	ALL	1ST		12/18/2013 24 hr
	382699.37	3864320.18			827.44		24-HR	ALL	1ST		1/27/2009 24 hr
	380308.4	3863547.3			831.71		24-HR	ALL	1ST		1/5/2009 24 hr
	382773.46 382015.24	3863415.61 3862841.66			814.85 809.82		24-HR 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 12/23/2013 24 hr
	382015.24	3864892.65			836.75		24-HR	ALL	1ST		12/18/2013 24 hr
	382015.24	3862866.25			810.07		24-HR	ALL	1ST		12/23/2013 24 hr
	380403.71	3863795.86			834.45		24-HR	ALL	1ST		1/5/2009 24 hr
	382674.47	3864320.47	0.90444	827.46	827.46	1.5	24-HR	ALL	1ST		1/27/2009 24 hr
	382026.99	3865113.67			839.37		24-HR	ALL	1ST		12/18/2013 24 hr
	382015.24	3863136.7			813.45		24-HR	ALL	1ST		1/27/2009 24 hr
	382026.99 382309.26	3864868.09			836.44		24-HR	ALL	1ST		12/18/2013 24 hr
	382309.26	3863342.01 3865139.33			814.82 839.66		24-HR 24-HR	ALL ALL	1ST 1ST		12/23/2013 24 hr 12/18/2013 24 hr
	382015.24	3862890.83			810.35		24-HR	ALL	1ST		12/23/2013 24 hr
	382026.99	3864843.53	0.89576		836.11		24-HR	ALL	1ST		12/18/2013 24 hr
	382649.56	3864320.75	0.89507	827.48	827.48	1.5	24-HR	ALL	1ST		1/27/2009 24 hr
	382297.12	3863321.65	0.89398				24-HR	ALL	1ST		12/23/2013 24 hr
	381752.45	3865139.57					24-HR	ALL	1ST		12/18/2013 24 hr
	382026.99	3864818.97					24-HR	ALL	1ST		12/18/2013 24 hr
	381777.41 382026.99	3865139.45 3865138.23			839.74 839.73		24-HR 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 12/18/2013 24 hr
	382026.99	3862915.42			810.63		24-HR	ALL	1ST		12/18/2013 24 hr
	382015.24	3863112.11					24-HR	ALL	1ST		1/27/2009 24 hr
	382624.66	3864321.03			827.49		24-HR	ALL	1ST		1/27/2009 24 hr
	379598.24	3863390.33	0.88353	836.87	836.87		24-HR	ALL	1ST		1/5/2009 24 hr
	382026.99	3864794.42					24-HR	ALL	1ST		12/18/2013 24 hr
	382797.6	3863415.61			814.66		24-HR	ALL	1ST		12/23/2013 24 hr
	382015.24	3862940.01			810.94 825.24		24-HR	ALL	1ST		12/23/2013 24 hr
	382026.99 382015.24	3864769.86 3863087.53			835.24 812.84		24-HR 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 2/1/2013 24 hr
	382599.76	3864321.31					24-HR	ALL	1ST		1/27/2009 24 hr
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			Concentration		[PM10 Analys	sis				
			(AVERAGE CONC)	Elevation	Hill Heights	Flagpole	Averagin Period	Source Group			
Χ	Υ		[ug/m^3]	(ZELEV)	(ZHILL)	(ZFLAG)	(AVE)	(GRP)	Rank	Net ID	Date (DATE(CON)
	382820.96	3863436.75	0.87581	814.74	814.74	1.	5 24-HR	ALL	1ST		2/1/2013 24 hr
	382015.24	3863062.94	0.87383				5 24-HR	ALL	1ST		2/1/2013 24 hr
	381227.44	3864871.44	0.87364				5 24-HR	ALL	1ST		1/5/2009 24 hr
	382015.24 382026.99	3863038.35 3864745.3	0.87066 0.86921				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		2/1/2013 24 hr 12/18/2013 24 hr
	380283.96	3863546.94	0.8679				5 24-HR	ALL	1ST		1/5/2009 24 hr
	382015.24	3862964.59					5 24-HR	ALL	1ST		12/23/2013 24 hr
	382574.85	3864321.6	0.86747				5 24-HR	ALL	1ST		1/27/2009 24 hr
	382015.24	3863013.77	0.86686	811.85	811.85	1.	5 24-HR	ALL	1ST		2/1/2013 24 hr
	381727.49	3865139.7	0.86417				5 24-HR	ALL	1ST		12/18/2013 24 hr
	382026.99	3864720.74	0.86144				5 24-HR	ALL	1ST		12/18/2013 24 hr
	382015.24 380403.46	3862989.18 3863820.57	0.86142 0.85913				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		2/1/2013 24 hr 1/5/2009 24 hr
	382549.95	3864321.88	0.85881				5 24-HR	ALL	1ST		1/27/2009 24 hr
	382026.99	3864696.18					5 24-HR	ALL	1ST		12/18/2013 24 hr
	382076.8	3864327.25	0.85328				5 24-HR	ALL	1ST		12/18/2013 24 hr
	382101.7	3864326.96	0.85314	828.15	828.15	1.	5 24-HR	ALL	1ST		12/18/2013 24 hr
	382126.6	3864326.68	0.85312				5 24-HR	ALL	1ST		12/18/2013 24 hr
	382051.89	3864327.53	0.85311				5 24-HR	ALL	1ST		12/18/2013 24 hr
	382151.5 382300.92	3864326.4 3864324.7	0.8527 0.8524				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 12/18/2013 24 hr
	382300.92	3864324.42					5 24-HR	ALL	1ST		12/18/2013 24 hr
	382026.99	3864327.81	0.85204				5 24-HR	ALL	1ST		12/18/2013 24 hr
	382176.41	3864326.12	0.85194	828.02	828.02		5 24-HR	ALL	1ST		12/18/2013 24 hr
	382350.73	3864324.14	0.85177	827.89	827.89	1.	5 24-HR	ALL	1ST		12/18/2013 24 hr
	382375.63	3864323.86	0.85149				5 24-HR	ALL	1ST		12/18/2013 24 hr
	382201.31	3864325.83	0.85128				5 24-HR	ALL	1ST		12/18/2013 24 hr
	382400.53 382276.02	3864323.57 3864324.99	0.85115 0.85114				5 24-HR 5 24-HR	ALL	1ST		12/18/2013 24 hr 12/18/2013 24 hr
	382251.12	3864325.27					5 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr
	382226.21	3864325.55					5 24-HR	ALL	1ST		12/18/2013 24 hr
	382450.34	3864323.01	0.85092	827.8			5 24-HR	ALL	1ST		12/18/2013 24 hr
	382425.44	3864323.29	0.85091	827.79	827.79	1.	5 24-HR	ALL	1ST		12/18/2013 24 hr
	379598.47	3863414.77	0.85085				5 24-HR	ALL	1ST		1/5/2009 24 hr
	382475.24	3864322.73	0.85079				5 24-HR	ALL	1ST		12/18/2013 24 hr
	382500.14 381702.53	3864322.44 3865139.82					5 24-HR 5 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 12/18/2013 24 hr
	382525.05	3864322.16					5 24-HR	ALL	1ST		12/18/2013 24 hr
	382026.99	3864671.62					5 24-HR	ALL	1ST		12/18/2013 24 hr
	381174.57	3863936.78	0.8414	828.32	828.32	1.	5 24-HR	ALL	1ST		1/5/2009 24 hr
	379091.84	3862415.67					5 24-HR	ALL	1ST		1/5/2009 24 hr
	382026.99	3864647.07					5 24-HR	ALL	1ST		12/18/2013 24 hr
	381677.57	3865139.94 3864622.51	0.83514 0.83147				5 24-HR	ALL	1ST		12/18/2013 24 hr
	382026.99 380775.95	3863940.58					5 24-HR 5 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 12/18/2013 24 hr
	380800.86	3863940.34					5 24-HR	ALL	1ST		12/18/2013 24 hr
	380825.78	3863940.11					5 24-HR	ALL	1ST		12/18/2013 24 hr
	380850.69	3863939.87	0.82708	831.67	831.67	1.	5 24-HR	ALL	1ST		12/18/2013 24 hr
	380751.04	3863940.82					5 24-HR	ALL	1ST		12/18/2013 24 hr
	380875.6	3863939.63	0.82627				5 24-HR	ALL	1ST		12/18/2013 24 hr
	380900.52 382026.99	3863939.39 3864597.95	0.825 0.82407				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 12/18/2013 24 hr
	380925.43	3863939.16					5 24-HR	ALL	1ST		12/18/2013 24 hr
	381227.52	3864896.05	0.82102				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380726.12	3863941.06					5 24-HR	ALL	1ST		12/18/2013 24 hr
	380950.35	3863938.92					5 24-HR	ALL	1ST		12/18/2013 24 hr
	382087.86	3863254.35					5 24-HR	ALL	1ST		1/27/2009 24 hr
	380975.26 382026.99	3863938.68 3864573.39	0.81685 0.81654				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 12/18/2013 24 hr
	381149.66	3863937.02					5 24-HR	ALL	1ST		12/18/2013 24 hr
	381099.83	3863937.5					5 24-HR	ALL	1ST		12/18/2013 24 hr
	381050	3863937.97					5 24-HR	ALL	1ST		12/18/2013 24 hr
	381124.74	3863937.26	0.81611	828.84	828.84	1.	5 24-HR	ALL	1ST		12/18/2013 24 hr
	381074.92	3863937.73					5 24-HR	ALL	1ST		12/18/2013 24 hr
	380259.52	3863546.58					5 24-HR	ALL	1ST		1/5/2009 24 hr
	381000.17 379598.71	3863938.45 3863439.21					5 24-HR 5 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 1/5/2009 24 hr
	381025.09	3863938.21					5 24-HR	ALL	1ST		1/3/2009 24 fil 12/18/2013 24 hr
	379188.43	3862726.54					5 24-HR	ALL	1ST		1/5/2009 24 hr
	380701.21	3863941.29					5 24-HR	ALL	1ST		12/18/2013 24 hr
	382026.99	3864548.83	0.81018				5 24-HR	ALL	1ST		12/18/2013 24 hr
	382821.74	3863415.61					5 24-HR	ALL	1ST		12/23/2013 24 hr
	380403.22 382026.99	3863845.29					5 24-HR	ALL	1ST		1/5/2009 24 hr
	382026.99	3864524.28 3863941.53					5 24-HR 5 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 12/18/2013 24 hr
	2030, 0.23	22000 TI.OO	5.501	555.74	333.74	Δ.					,,,

Concentration F							M10 Ana	llysis						
			(AVERAGE		Elevation	Hill Heig	hts	Flagpole	Averagin Pe	eriod	Source Group			
Χ	Υ		[ug/m^3]	,	(ZELEV)	(ZHILL)		(ZFLAG)	(AVE)		(GRP)	Rank	Net ID	Date (DATE(CON)
	382026.99	3864499.72		0.8003	830.64		830.64		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	381652.61	3865140.06		0.79998			840.39		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	382026.99	3864352.37		0.79755	828.29		828.29		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	382026.99 382857.8	3864475.16 3863437.98		0.79564 0.79545	830.28 814.57		830.28 814.57		1.5 24-HR 1.5 24-HR		ALL ALL	1ST 1ST		12/18/2013 24 hr 2/1/2013 24 hr
	379188.77	3862751.36		0.79343	829.3		829.3		1.5 24-HR		ALL	1ST		1/5/2009 24 hr
	382087.86	3863183.48		0.79341	813.53		813.53		1.5 24-HR		ALL	1ST		1/27/2009 24 hr
	382026.99	3864450.6		0.79139	829.88		829.88		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	382026.99	3864376.93		0.78844	828.68		828.68		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	382026.99	3864426.04		0.78814	829.47		829.47		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	380651.38	3863941.77		0.7872	834.16		834.16		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	382026.99	3864401.48		0.78686	829.09		829.09		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	379163.49 379598.95	3862726.48 3863463.65		0.78638 0.78547			829.05 838.4		1.5 24-HR 1.5 24-HR		ALL ALL	1ST 1ST		1/5/2009 24 hr 1/29/2009 24 hr
	380235.08	3863546.23		0.78513	832.22		832.22		1.5 24-HR		ALL	1ST		1/5/2009 24 hr
	381627.66	3865140.19		0.77927	840.46		840.46		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	379189.11	3862776.19		0.77346			829.69		1.5 24-HR		ALL	1ST		1/5/2009 24 hr
	380626.47	3863942		0.77089	834.58		834.58		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	381227.6	3864920.66		0.76429	839.61		839.61		1.5 24-HR		ALL	1ST		1/5/2009 24 hr
	379138.55	3862726.42		0.76038			829.32		1.5 24-HR		ALL	1ST		1/5/2009 24 hr
	381602.7	3865140.31		0.75904	840.49		840.49		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	380601.55 380210.64	3863942.24 3863545.87		0.75316 0.75248	834.97 832.39		834.97 832.39		1.5 24-HR 1.5 24-HR		ALL ALL	1ST 1ST		12/18/2013 24 hr 1/5/2009 24 hr
	379189.45	3862801.01		0.75017	830.03		830.03		1.5 24-HR		ALL	1ST		1/5/2009 24 hr
	379599.19	3863488.09		0.74705	838.91		838.91		1.5 24-HR		ALL	1ST		1/29/2009 24 hr
	382055.65	3862687.37		0.74536	808.19		808.19		1.5 24-HR		ALL	1ST		12/23/2013 24 hr
	381577.74	3865140.43		0.74487	840.58		840.58		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	380402.97	3863870		0.74134	835.73		835.73		1.5 24-HR		ALL	1ST		1/5/2009 24 hr
	379113.61	3862726.36		0.73528			829.7		1.5 24-HR		ALL	1ST		1/5/2009 24 hr
	380576.64	3863942.48		0.73261			835.33		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	380186.21 379189.79	3863545.52 3862825.83		0.72603 0.72598	832.58 830.42		832.58 830.42		1.5 24-HR 1.5 24-HR		ALL ALL	1ST 1ST		1/5/2009 24 hr 1/5/2009 24 hr
	381552.78	3865140.55		0.72338			840.79		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	380161.77	3863545.16		0.71242			832.84		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	380137.33	3863544.8		0.71064	833.19		833.19		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	379088.67	3862726.31		0.71035	830.12		830.12		1.5 24-HR		ALL	1ST		1/5/2009 24 hr
	380551.72	3863942.72		0.70895			835.58		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	380112.89	3863544.45		0.70356			833.49		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	381227.68 379190.13	3864945.27 3862850.65		0.70317 0.70117			839.89 830.87		1.5 24-HR 1.5 24-HR		ALL ALL	1ST 1ST		1/5/2009 24 hr 1/5/2009 24 hr
	380088.45	3863544.09		0.69562			833.7		1.5 24-HR		ALL	1ST		1/3/2009 24 III 12/18/2013 24 hr
	378866.18	3862085.75		0.69394			821.41		1.5 24-HR		ALL	1ST		1/5/2009 24 hr
	379599.42	3863512.53		0.69285	839.4		839.4		1.5 24-HR		ALL	1ST		1/29/2009 24 hr
	381527.82	3865140.67		0.6918	840.87		840.87		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	379063.73	3862726.25		0.6831			830.26		1.5 24-HR		ALL	1ST		1/5/2009 24 hr
	380526.81	3863942.95		0.68159			835.8		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	380064.01 380039.57	3863543.74 3863543.38		0.6813 0.67711			833.88 834.1		1.5 24-HR 1.5 24-HR		ALL ALL	1ST 1ST		12/18/2013 24 hr 12/18/2013 24 hr
	379190.47	3862875.48		0.67543			831.34		1.5 24-HR		ALL	1ST		1/5/2009 24 hr
	382014.27	3862504.46		0.67421			806.14		1.5 24-HR		ALL	1ST		12/16/2013 24 hr
	381502.86	3865140.8		0.67185	840.78		840.78		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	380015.13	3863543.02		0.6704	834.4		834.4		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	382014.36	3862480.28		0.668			805.85		1.5 24-HR		ALL	1ST		12/16/2013 24 hr
	382014.44	3862456.09		0.66713	805.63		805.63		1.5 24-HR		ALL	1ST		12/16/2013 24 hr
	382002.39 380402.73	3862482.96 3863894.71		0.66607 0.6638			805.84		1.5 24-HR 1.5 24-HR		ALL	1ST		12/16/2013 24 hr 1/29/2009 24 hr
	379990.69	3863542.67		0.66355			836.06 834.76		1.5 24-HR		ALL ALL	1ST 1ST		1/29/2009 24 III 12/18/2013 24 hr
	381990.5	3862461.47		0.66236			805.67		1.5 24-HR		ALL	1ST		12/16/2013 24 hr
	379966.25	3863542.31		0.66204	835.13		835.13		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	381978.62	3862439.97		0.65671	805.52		805.52		1.5 24-HR		ALL	1ST		12/16/2013 24 hr
	379038.79	3862726.19		0.6556	830.33		830.33		1.5 24-HR		ALL	1ST		1/5/2009 24 hr
	384824.77	3863470.59		0.65076			806.87		1.5 24-HR		ALL	1ST		12/23/2013 24 hr
	380501.9	3863943.19		0.65022			836.06		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	381966.74 379190.81	3862418.48 3862900.3		0.64936 0.64823			805.32 831.76		1.5 24-HR 1.5 24-HR		ALL ALL	1ST 1ST		12/16/2013 24 hr 1/5/2009 24 hr
	381477.9	3865140.92		0.64823 0.64779			840.79		1.5 24-HR 1.5 24-HR		ALL	1ST		1/5/2009 24 hr 12/18/2013 24 hr
	382014.53	3862431.91		0.64572			805.39		1.5 24-HR		ALL	1ST		12/16/2013 24 hr
	379941.81	3863541.95		0.64531			835.43		1.5 24-HR		ALL	1ST		12/18/2013 24 hr
	381954.86	3862396.98		0.64114	805.05		805.05		1.5 24-HR		ALL	1ST		12/16/2013 24 hr
	382014.61	3862407.73		0.64006			805.14		1.5 24-HR		ALL	1ST		12/16/2013 24 hr
	381227.76	3864969.88		0.63936			840.16		1.5 24-HR		ALL	1ST		1/5/2009 24 hr
	382014.7 379917.37	3862383.55		0.63514			804.87		1.5 24-HR		ALL	1ST		12/16/2013 24 hr
	3/9917.37	3863541.6 3862375.49		0.63385 0.63271			835.59 804.79		1.5 24-HR 1.5 24-HR		ALL ALL	1ST 1ST		12/18/2013 24 hr 12/16/2013 24 hr
	379013.85	3862726.13		0.62993			830.61		1.5 24-HR		ALL	1ST		1/5/2009 24 hr
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Concentration							is				
			(AVERAGE CONC)	Elevation	Hill Heights	Flagpole	Averagin Period	Source Group			
Χ	Υ		[ug/m^3]	(ZELEV)	(ZHILL)	(ZFLAG)	(AVE)	(GRP)	Rank	Net ID	Date (DATE(CON)
	380402.48	3863919.43	0.62674	836.42	836.42	1.5	5 24-HR	ALL	1ST		1/29/2009 24 hr
	381931.09	3862353.99	0.62447				5 24-HR	ALL	1ST		12/16/2013 24 hr
	379019.53	3861962.53	0.62163				5 24-HR	ALL	1ST		1/5/2009 24 hr
	382014.78 381452.95	3862359.37 3865141.04	0.62059 0.62004				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		12/16/2013 24 hr 12/18/2013 24 hr
	379892.93	3863541.24	0.62004				5 24-HR	ALL	1ST		12/18/2013 24 hr
	379191.15	3862925.12					5 24-HR	ALL	1ST		1/5/2009 24 hr
	381919.21	3862332.5	0.61645				5 24-HR	ALL	1ST		12/16/2013 24 hr
	382014.87	3862335.18	0.61524	804.34	804.34	1.5	5 24-HR	ALL	1ST		12/16/2013 24 hr
	380476.98	3863943.43	0.61436	836.39	836.39	1.5	5 24-HR	ALL	1ST		12/18/2013 24 hr
	379868.49	3863540.89	0.61345				5 24-HR	ALL	1ST		12/18/2013 24 hr
	382015.04	3862286.82	0.61308				5 24-HR	ALL	1ST		12/16/2013 24 hr
	382014.95 381907.32	3862311 3862311	0.61092 0.60873				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		12/16/2013 24 hr 12/16/2013 24 hr
	378988.91	3862726.07					5 24-HR	ALL	1ST		1/5/2009 24 hr
	381895.44	3862289.5	0.60101				5 24-HR	ALL	1ST		12/16/2013 24 hr
	380216.16	3862088.49	0.59924				5 24-HR	ALL	1ST		1/5/2009 24 hr
	379844.05	3863540.53	0.59454	836.09	836.09	1.5	5 24-HR	ALL	1ST		12/18/2013 24 hr
	379506.94	3861951.57					5 24-HR	ALL	1ST		1/5/2009 24 hr
	381883.56	3862268.01					5 24-HR	ALL	1ST		12/16/2013 24 hr
	382015.12	3862262.63	0.59321				5 24-HR	ALL	1ST		12/16/2013 24 hr
	381227.84 379191.49	3864994.49 3862949.94	0.59093 0.5908				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/5/2009 24 hr
	382015.21	3862238.45	0.5892				5 24-HR	ALL	1ST		12/16/2013 24 hr
	382015.38	3862190.09	0.58839				5 24-HR	ALL	1ST		12/16/2013 24 hr
	381427.99	3865141.16	0.58802				5 24-HR	ALL	1ST		12/18/2013 24 hr
	381871.67	3862246.51	0.58614	803.74	803.74	1.5	5 24-HR	ALL	1ST		12/16/2013 24 hr
	382015.3	3862214.27	0.58606	803.15	995.55	1.5	5 24-HR	ALL	1ST		12/16/2013 24 hr
	380328.43	3862104.92					5 24-HR	ALL	1ST		1/5/2009 24 hr
	379819.61	3863540.17					5 24-HR	ALL	1ST		12/18/2013 24 hr
	379648.54 379672.98	3863537.68 3863538.04					5 24-HR 5 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	379072.98	3863539.82					5 24-HR	ALL	1ST		12/18/2013 24 hr
	379697.42	3863538.39	0.5813				5 24-HR	ALL	1ST		1/29/2009 24 hr
	378963.97	3862726.01					5 24-HR	ALL	1ST		1/5/2009 24 hr
	381859.79	3862225.02	0.57921	803.58	803.58	1.5	5 24-HR	ALL	1ST		12/16/2013 24 hr
	379770.74	3863539.46					5 24-HR	ALL	1ST		12/18/2013 24 hr
	379721.86	3863538.75					5 24-HR	ALL	1ST		1/29/2009 24 hr
	381847.91 382015.47	3862203.52 3862165.91					5 24-HR 5 24-HR	ALL ALL	1ST 1ST		12/16/2013 24 hr 12/16/2013 24 hr
	379624.1	3863537.33	0.56778				5 24-HR	ALL	1ST		1/29/2009 24 hr
	379599.66	3863536.97					5 24-HR	ALL	1ST		1/29/2009 24 hr
	380452.07	3863943.67	0.56729				5 24-HR	ALL	1ST		12/18/2013 24 hr
	382015.55	3862141.72	0.56692	802.38	995.55	1.5	5 24-HR	ALL	1ST		12/16/2013 24 hr
	382015.72	3862093.36					5 24-HR	ALL	1ST		12/16/2013 24 hr
	381836.03	3862182.03	0.56616				5 24-HR	ALL	1ST		12/16/2013 24 hr
	379746.3 382015.64	3863539.11 3862117.54					5 24-HR 5 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 12/16/2013 24 hr
	381227.92	3865019.1	0.56268				5 24-HR	ALL	1ST		1/29/2009 24 hr
	378685.21	3862465.49	0.56242				5 24-HR	ALL	1ST		1/5/2009 24 hr
	379191.83	3862974.77					5 24-HR	ALL	1ST		1/5/2009 24 hr
	381824.14	3862160.53	0.55988	803.21	803.21	1.5	5 24-HR	ALL	1ST		12/16/2013 24 hr
	381403.03	3865141.28	0.55902				5 24-HR	ALL	1ST		12/18/2013 24 hr
	378939.02	3862725.96					5 24-HR	ALL	1ST		1/5/2009 24 hr
	381812.26	3862139.04 3862020.81					5 24-HR 5 24-HP	ALL	1ST		12/16/2013 24 hr 12/16/2013 24 hr
	382015.98 382015.81	3862020.81					5 24-HR 5 24-HR	ALL ALL	1ST 1ST		12/16/2013 24 hr 12/16/2013 24 hr
	382015.89	3862044.99	0.54753				5 24-HR	ALL	1ST		12/16/2013 24 hr
	381800.38	3862117.54	0.54731	802.53			5 24-HR	ALL	1ST		12/16/2013 24 hr
	381788.49	3862096.04	0.54126	802.16	802.16	1.5	5 24-HR	ALL	1ST		12/16/2013 24 hr
	381776.61	3862074.55					5 24-HR	ALL	1ST		12/16/2013 24 hr
	382016.06	3861996.63	0.53415				5 24-HR	ALL	1ST		12/16/2013 24 hr
	381228	3865043.7					5 24-HR	ALL	1ST		1/29/2009 24 hr
	382016.32 382016.15	3861924.08 3861972.45					5 24-HR 5 24-HR	ALL ALL	1ST 1ST		12/16/2013 24 hr 12/16/2013 24 hr
	378914.08	3862725.9					5 24-HR	ALL	1ST		1/5/2009 24 hr
	382016.23	3861948.26					5 24-HR	ALL	1ST		12/16/2013 24 hr
	381764.73	3862053.05					5 24-HR	ALL	1ST		12/16/2013 24 hr
	379192.17	3862999.59	0.52928	833.45	833.45	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	381752.84	3862031.56					5 24-HR	ALL	1ST		12/16/2013 24 hr
	381378.07	3865141.41					5 24-HR	ALL	1ST		12/18/2013 24 hr
	381740.96	3862010.06					5 24-HR 5 24-HP	ALL	1ST		12/16/2013 24 hr
	380427.15 380402.24	3863943.9 3863944.14					5 24-HR 5 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	381729.08	3861988.57					5 24-HR	ALL	1ST		12/16/2013 24 hr
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			Concentration			PM10 Analys	sis				
			(AVERAGE CONC)	Elevation	Hill Heights	Flagpole	Averagin Period	Source Group			
Χ	Υ		[ug/m^3]		(ZHILL)	(ZFLAG)	(AVE)	(GRP)	Rank	Net ID	Date (DATE(CON)
	381717.2	3861967.07	0.50956	800.84	800.84	1.5	5 24-HR	ALL	1ST		12/16/2013 24 hr
	378889.14	3862725.84	0.50647				5 24-HR	ALL	1ST		1/5/2009 24 hr
	381705.31	3861945.58	0.50475				5 24-HR	ALL	1ST		12/16/2013 24 hr
	381228.08 381718.27	3865068.31 3861924.08	0.50246 0.50008				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 12/16/2013 24 hr
	381693.43	3861924.08	0.50008				5 24-HR	ALL	1ST		12/16/2013 24 hr
	381743.11	3861924.08					5 24-HR	ALL	1ST		12/16/2013 24 hr
	381767.94	3861924.08	0.49979				5 24-HR	ALL	1ST		12/16/2013 24 hr
	381792.78	3861924.08	0.49948	800.37	995.55	1.5	5 24-HR	ALL	1ST		12/16/2013 24 hr
	381817.62	3861924.08					5 24-HR	ALL	1ST		12/16/2013 24 hr
	381842.46	3861924.08	0.49863				5 24-HR	ALL	1ST		12/16/2013 24 hr
	381867.29 379192.51	3861924.08 3863024.41	0.49811 0.49745				5 24-HR	ALL	1ST 1ST		12/16/2013 24 hr 1/5/2009 24 hr
	381892.13	3861924.08	0.49744				5 24-HR 5 24-HR	ALL ALL	1ST		12/16/2013 24 hr
	381916.97	3861924.08					5 24-HR	ALL	1ST		12/16/2013 24 hr
	381941.81	3861924.08	0.49448				5 24-HR	ALL	1ST		12/16/2013 24 hr
	381966.64	3861924.08	0.49167	800.44	995.55	1.5	5 24-HR	ALL	1ST		12/16/2013 24 hr
	381991.48	3861924.08	0.49076				5 24-HR	ALL	1ST		12/16/2013 24 hr
	381353.11	3865141.53	0.49035				5 24-HR	ALL	1ST		12/18/2013 24 hr
	382513.1	3862764.68					5 24-HR	ALL	1ST		12/23/2013 24 hr
	378864.2 381228.16	3862725.78 3865092.92					5 24-HR 5 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 10/30/2013 24 hr
	379192.85	3863049.24	0.4656				5 24-HR	ALL	1ST		1/5/2009 24 hr
	381328.15	3865141.65	0.4617				5 24-HR	ALL	1ST		2/22/2013 24 hr
	378839.26	3862725.72	0.45755	832.74	832.74	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	381303.2	3865141.77	0.45277				5 24-HR	ALL	1ST		2/22/2013 24 hr
	381963.18	3861691.43	0.44948		995.55		5 24-HR	ALL	1ST		12/16/2013 24 hr
	381228.24	3865117.53	0.44802				5 24-HR	ALL	1ST		10/30/2013 24 hr
	381278.24 378814.32	3865141.9 3862725.66	0.44023 0.43354				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		2/22/2013 24 hr 1/5/2009 24 hr
	379193.19	3863074.06					5 24-HR	ALL	1ST		1/5/2009 24 hr
	381253.28	3865142.02					5 24-HR	ALL	1ST		12/5/2013 24 hr
	378789.38	3862725.6	0.40998	832.89	832.89	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	379193.53	3863098.88					5 24-HR	ALL	1ST		1/5/2009 24 hr
	378764.44	3862725.55					5 24-HR	ALL	1ST		1/5/2009 24 hr
	379268.71	3863181.06					5 24-HR	ALL	1ST		1/5/2009 24 hr
	381228.32 380744.65	3865142.14 3861973.48					5 24-HR 5 24-HR	ALL ALL	1ST 1ST		12/5/2013 24 hr 12/20/2012 24 hr
	381965.44	3860757.67	0.37695				5 24-HR	ALL	1ST		12/16/2013 24 hr
	379193.87	3863123.7					5 24-HR	ALL	1ST		1/5/2009 24 hr
	378739.5	3862725.49	0.36578	833.36	833.36	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	382065.31	3860828.55					5 24-HR	ALL	1ST		12/16/2013 24 hr
	382086.41	3861639.41	0.34571				5 24-HR	ALL	1ST		12/16/2013 24 hr
	378714.56 379194.2	3862725.43 3863148.53	0.34475 0.33481				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/5/2009 24 hr
	379175.98	3863545.66					5 24-HR	ALL	1ST		1/29/2009 24 hr
	379199.64	3863545.69					5 24-HR	ALL	1ST		1/29/2009 24 hr
	379199.3	3863520.87	0.33209	844.34	844.34	1.5	5 24-HR	ALL	1ST		1/29/2009 24 hr
	381446.78	3860815.66					5 24-HR	ALL	1ST		12/16/2013 24 hr
	378689.62	3862725.37					5 24-HR	ALL	1ST		1/5/2009 24 hr
	379198.96 380971.93	3863496.04 3861688.7	0.32359 0.31987				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 12/20/2012 24 hr
	379198.62	3863471.22					5 24-HR	ALL	1ST		1/29/2009 24 hr
	379198.28	3863446.4	0.31502				5 24-HR	ALL	1ST		1/29/2009 24 hr
	379152.32	3863545.63	0.31171				5 24-HR	ALL	1ST		1/29/2009 24 hr
	379197.94	3863421.58					5 24-HR	ALL	1ST		1/29/2009 24 hr
	382102.84	3861351.89 3863396.75					5 24-HR	ALL	1ST		12/16/2013 24 hr
	379197.6 378664.68	3862725.31	0.3069 0.30495				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/5/2009 24 hr
	379128.66	3863545.6					5 24-HR	ALL	1ST		1/29/2009 24 hr
	379197.26	3863371.93					5 24-HR	ALL	1ST		1/29/2009 24 hr
	379194.54	3863173.35	0.30174	837.34	837.34	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	379196.92	3863347.11					5 24-HR	ALL	1ST		1/29/2009 24 hr
	379105	3863545.57					5 24-HR	ALL	1ST		1/29/2009 24 hr
	379196.58 379081 3 <i>4</i>	3863322.29 3863545 53					5 24-HR 5 24-HR	ALL	1ST		1/29/2009 24 hr
	379081.34 380446.61	3863545.53 3864399.96					5 24-HR 5 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	379196.24	3863297.46					5 24-HR	ALL	1ST		1/29/2009 24 hr
	379057.68	3863545.5					5 24-HR	ALL	1ST		1/29/2009 24 hr
	378639.74	3862725.25					5 24-HR	ALL	1ST		1/5/2009 24 hr
	379034.02	3863545.47					5 24-HR	ALL	1ST		1/29/2009 24 hr
	379195.9	3863272.64					5 24-HR	ALL	1ST		1/29/2009 24 hr
	379010.36 379195.56	3863545.44 3863247.82					5 24-HR 5 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	378986.7	3863545.41					5 24-FIR 5 24-HR	ALL	1ST		1/29/2009 24 hr
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Concentration							S				
			(AVERAGE CONC)	Elevation	Hill Heights	Flagpole	Averagin Period	Source Group			
Χ	Υ		[ug/m^3]	(ZELEV)	(ZHILL)	(ZFLAG)	(AVE)	(GRP)	Rank	Net ID	Date (DATE(CON)
	379195.22	3863222.99	0.2699	838.34	838.34	1.5	24-HR	ALL	1ST		1/29/2009 24 hr
	378963.04	3863545.38	0.2688				24-HR	ALL	1ST		1/29/2009 24 hr
	379194.88	3863198.17	0.26863				24-HR	ALL	1ST		1/5/2009 24 hr
	378614.8 378939.38	3862725.19 3863545.35	0.2678 ³ 0.26486				24-HR 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/29/2009 24 hr
	378915.72	3863545.32	0.2609				24-HR	ALL	1ST		1/29/2009 24 hr
	378892.06	3863545.28	0.2571				24-HR	ALL	1ST		1/29/2009 24 hr
	378868.4	3863545.25	0.25310				24-HR	ALL	1ST		1/29/2009 24 hr
	378589.86	3862725.14	0.25023	835.08	835.08	1.5	24-HR	ALL	1ST		1/5/2009 24 hr
	378844.74	3863545.22	0.2492	849.42	849.42	1.5	24-HR	ALL	1ST		1/29/2009 24 hr
	378796.03	3863663.9	0.2464				24-HR	ALL	1ST		1/29/2009 24 hr
	378796.31	3863640.15	0.24609				24-HR	ALL	1ST		1/29/2009 24 hr
	378821.08 378796.59	3863545.19 3863616.4	0.2454 0.2449				24-HR 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	378795.75	3863687.64	0.2448				24-HR	ALL	1ST		1/29/2009 24 hr
	378796.86	3863592.65	0.24				24-HR	ALL	1ST		1/29/2009 24 hr
	378797.14	3863568.91	0.24309	850.54	850.54	1.5	24-HR	ALL	1ST		1/29/2009 24 hr
	379814.93	3864095.01	0.24303	846.13	846.13	1.5	24-HR	ALL	1ST		1/29/2009 24 hr
	378797.42	3863545.16	0.24184				24-HR	ALL	1ST		1/29/2009 24 hr
	378795.47	3863711.39	0.24064				24-HR	ALL	1ST		1/29/2009 24 hr
	379742.33 378795.19	3864015.14 3863735.14	0.23818 0.233!				24-HR 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	378564.92	3862725.08	0.2334				24-HR	ALL	1ST		1/5/2009 24 hr
	378794.92	3863758.88	0.22364				24-HR	ALL	1ST		1/29/2009 24 hr
	379633.42	3864109.53	0.22072				24-HR	ALL	1ST		1/29/2009 24 hr
	379640.68	3864007.88	0.219	848.07	848.07	1.5	24-HR	ALL	1ST		1/29/2009 24 hr
	378539.98	3862725.02	0.2176				24-HR	ALL	1ST		1/5/2009 24 hr
	378794.64	3863782.63	0.21179				24-HR	ALL	1ST		1/29/2009 24 hr
	378515.04	3862724.96	0.2029				24-HR	ALL	1ST		1/5/2009 24 hr
	378794.36 379422.86	3863806.38 3863797.32					24-HR 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	379626.16	3864915.46					24-HR	ALL	1ST		1/29/2009 24 hr
	379422.86	3864087.75					24-HR	ALL	1ST		1/29/2009 24 hr
	379408.34	3864160.35	0.1922	853.7	853.7	1.5	24-HR	ALL	1ST		1/29/2009 24 hr
	379408.34	3864044.18					24-HR	ALL	1ST		1/29/2009 24 hr
	378490.1	3862724.9					24-HR	ALL	1ST		1/5/2009 24 hr
	379437.38	3863869.93					24-HR	ALL	1ST		1/29/2009 24 hr
	379408.34 378794.08	3863993.36 3863830.12					24-HR 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	378191.7	3863769.42					24-HR	ALL	1ST		1/29/2009 24 hr
	378191.89	3863746.96					24-HR	ALL	1ST		1/29/2009 24 hr
	378191.51	3863791.89	0.1802	861.09	861.09	1.5	24-HR	ALL	1ST		1/29/2009 24 hr
	378191.32	3863814.35					24-HR	ALL	1ST		1/29/2009 24 hr
	378169.62	3863746.95	0.17858				24-HR	ALL	1ST		1/29/2009 24 hr
	378191.13 379248.6	3863836.82 3864138.57					24-HR	ALL	1ST 1ST		1/29/2009 24 hr
	379246.6	3863746.95					24-HR 24-HR	ALL ALL	1ST		1/29/2009 24 hr 1/29/2009 24 hr
	378465.16	3862724.84					24-HR	ALL	1ST		1/5/2009 24 hr
	378125.08	3863746.94	0.175				24-HR	ALL	1ST		1/29/2009 24 hr
	378793.8	3863853.87	0.1748	7 856.82	856.82	1.5	24-HR	ALL	1ST		1/29/2009 24 hr
	378190.94	3863859.28					24-HR	ALL	1ST		1/29/2009 24 hr
	378102.81	3863746.93					24-HR	ALL	1ST		1/29/2009 24 hr
	378080.55 382964.11	3863746.93 3861824	0.1723 0.17128				24-HR 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 2/11/2013 24 hr
	378190.75	3863881.75	0.1712				24-HR	ALL	1ST		1/29/2009 24 hr
	378058.28	3863746.92					24-HR	ALL	1ST		1/29/2009 24 hr
	378036.01	3863746.91					24-HR	ALL	1ST		1/29/2009 24 hr
	379125.17	3864203.92	0.1670	857.26	857.26	1.5	24-HR	ALL	1ST		1/29/2009 24 hr
	379146.96	3864124.05	0.166				24-HR	ALL	1ST		1/29/2009 24 hr
	378013.74	3863746.91					24-HR	ALL	1ST		1/29/2009 24 hr
	378440.21	3862724.79					24-HR	ALL	1ST		1/5/2009 24 hr
	378190.56 377991.47	3863904.21 3863746.9					24-HR 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	378793.52	3863877.62					24-HR	ALL	1ST		1/29/2009 24 hr
	377991.63	386377.02					24-HR	ALL	1ST		1/29/2009 24 hr
	379219.56	3864276.52					24-HR	ALL	1ST		1/29/2009 24 hr
	377991.79	3863699					24-HR	ALL	1ST		1/29/2009 24 hr
	377991.94	3863675.05					24-HR	ALL	1ST		1/29/2009 24 hr
	378190.37	3863926.68					24-HR	ALL	1ST		1/29/2009 24 hr
	377992.1 378415.27	3863651.1 3862724.73					24-HR 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/5/2009 24 hr
	378415.27 378793.25	3863901.37					24-HR 24-HR	ALL	1ST		1/29/2009 24 hr
	379226.82	3864603.25					24-HR	ALL	1ST		1/29/2009 24 hr
	377992.26	3863627.15					24-HR	ALL	1ST		1/29/2009 24 hr
	378190.18	3863949.14	0.15028	865	865	1.5	24-HR	ALL	1ST		1/29/2009 24 hr

			Concentration			PM10 Analysis					
			(AVERAGE CONC)	Elevation	Hill Heights	Flagpole	Averagin Period	Source Group			
Χ	Υ		[ug/m^3]		(ZHILL)		(AVE)	(GRP)	Rank	Net ID	Date (DATE(CON)
	378214.28	3863949.13	0.14942	864.94	864.94	1.5	24-HR	ALL	1ST		1/29/2009 24 hr
	378238.38	3863949.12			864.6		24-HR	ALL	1ST		1/29/2009 24 hr
	377992.42	3863603.2					24-HR	ALL	1ST		1/29/2009 24 hr
	378262.48 379372.04	3863949.11 3864334.61			864.27 857.61		24-HR 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	378334.78	3863949.07			863.37		24-HR	ALL	1ST		1/29/2009 24 hr
	378286.58	3863949.1			864.3		24-HR	ALL	1ST		1/29/2009 24 hr
	378310.68	3863949.08			863.93		24-HR	ALL	1ST		1/29/2009 24 hr
	378358.88	3863949.06	0.14719	863.13	863.13	1.5	24-HR	ALL	1ST		1/29/2009 24 hr
	378792.97	3863925.11			858.41		24-HR	ALL	1ST		1/29/2009 24 hr
	378390.33	3862724.67					24-HR	ALL	1ST		1/5/2009 24 hr
	379422.86 378382.98	3864429 3863949.05			858.19 863.11		24-HR 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	379226.82	3864341.87			859.23		24-HR	ALL	1ST		1/29/2009 24 hr
	377992.57	3863579.25					24-HR	ALL	1ST		1/29/2009 24 hr
	378407.08	3863949.04					24-HR	ALL	1ST		1/29/2009 24 hr
	378503.49	3863948.99	0.14392	861.58	861.58	1.5	24-HR	ALL	1ST		1/29/2009 24 hr
	378527.59	3863948.98			861.14		24-HR	ALL	1ST		1/29/2009 24 hr
	378479.38	3863949.01			862.13		24-HR	ALL	1ST		1/29/2009 24 hr
	378551.69 378575.79	3863948.97 3863948.96			860.7 860.41		24-HR 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	378373.79	3863949.02					24-HR	ALL	1ST		1/29/2009 24 hr
	378431.18	3863949.03					24-HR	ALL	1ST		1/29/2009 24 hr
	378599.89	3863948.95					24-HR	ALL	1ST		1/29/2009 24 hr
	378623.99	3863948.94	0.14184	860.25	860.25	1.5	24-HR	ALL	1ST		1/29/2009 24 hr
	378648.09	3863948.93			860.09		24-HR	ALL	1ST		1/29/2009 24 hr
	378672.19	3863948.92			859.86		24-HR	ALL	1ST		1/29/2009 24 hr
	378696.29	3863948.9					24-HR	ALL	1ST		1/29/2009 24 hr
	378792.69 378720.39	3863948.86 3863948.89					24-HR 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	377992.73	3863555.3					24-HR	ALL	1ST		1/29/2009 24 hr
	378744.49	3863948.88					24-HR	ALL	1ST		1/29/2009 24 hr
	378768.59	3863948.87	0.13988	859.31	859.31	1.5	24-HR	ALL	1ST		1/29/2009 24 hr
	379335.73	3864407.22					24-HR	ALL	1ST		1/29/2009 24 hr
	378365.39	3862724.61					24-HR	ALL	1ST		1/5/2009 24 hr
	377992.89 378340.45	3863531.35 3862724.55			856.61 836.41		24-HR 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/5/2009 24 hr
	377993.05	3863507.4			856.1		24-HR	ALL	1ST		1/29/2009 24 hr
	378315.51	3862724.49					24-HR	ALL	1ST		1/5/2009 24 hr
	377993.2	3863483.45	0.12401	855.57	855.57	1.5	24-HR	ALL	1ST		1/29/2009 24 hr
	377993.36	3863459.5	0.1182	854.98	854.98	1.5	24-HR	ALL	1ST		1/29/2009 24 hr
	378290.57	3862724.43					24-HR	ALL	1ST		1/5/2009 24 hr
	377993.52	3863435.55					24-HR	ALL	1ST		1/29/2009 24 hr
	378265.63 378240.69	3862724.38 3862724.32			837.13 837.46		24-HR 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/5/2009 24 hr
	377993.68	3863411.6					24-HR	ALL	1ST		1/29/2009 24 hr
	378215.75	3862724.26					24-HR	ALL	1ST		1/5/2009 24 hr
	377993.83	3863387.65	0.09912	853.45	853.45	1.5	24-HR	ALL	1ST		1/29/2009 24 hr
	378190.81	3862724.2					24-HR	ALL	1ST		11/5/2010 24 hr
	378165.87	3862724.14					24-HR	ALL	1ST		11/5/2010 24 hr
	378140.93 378115.99	3862724.08 3862724.02			838.3 838.74		24-HR 24-HR	ALL ALL	1ST 1ST		11/5/2010 24 hr 11/5/2010 24 hr
	378113.99	3862723.97					24-HR	ALL	1ST		11/5/2010 24 hr
	378066.11	3862723.91					24-HR	ALL	1ST		11/5/2010 24 hr
	378041.17	3862723.85					24-HR	ALL	1ST		11/5/2010 24 hr
	378016.23	3862723.79					24-HR	ALL	1ST		11/5/2010 24 hr
	377991.29	3862723.73					24-HR	ALL	1ST		11/5/2010 24 hr
	377966.35	3862723.67 3862723.61			840.34 840.58		24-HR 24-HR	ALL	1ST		11/5/2010 24 hr 11/5/2010 24 hr
	377941.4 377993.99	3863363.7	0.09239 0.09228		840.58 852.95		24-HR 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr
	377916.46	3862723.56					24-HR	ALL	1ST		11/5/2010 24 hr
	377891.52	3862723.5			841.22	1.5	24-HR	ALL	1ST		11/5/2010 24 hr
	377866.58	3862723.44	0.09102			1.5	24-HR	ALL	1ST		11/5/2010 24 hr
	377357.48	3862548.41					24-HR	ALL	1ST		11/5/2010 24 hr
	377841.64	3862723.38					24-HR	ALL	1ST		11/5/2010 24 hr
	377816.7 377791.76	3862723.32 3862723.26					24-HR 24-HR	ALL ALL	1ST 1ST		11/5/2010 24 hr 11/5/2010 24 hr
	377766.82	3862723.20					24-nk 24-HR	ALL	151 1ST		11/5/2010 24 hr
	377741.88	3862723.15					24-HR	ALL	1ST		11/5/2010 24 hr
	377716.94	3862723.09					24-HR	ALL	1ST		11/5/2010 24 hr
	377692	3862723.03					24-HR	ALL	1ST		11/5/2010 24 hr
	377667.06	3862722.97					24-HR	ALL	1ST		11/5/2010 24 hr
	377642.12	3862722.91			843.3		24-HR 24-HP	ALL ALL	1ST		11/5/2010 24 hr
	377617.18 377592.24	3862722.85 3862722.8					24-HR 24-HR	ALL	1ST 1ST		11/5/2010 24 hr 11/5/2010 24 hr
	J. 1002.27	2002122.0	0.00303	5 +5.27	5-5.27	1.5	-·····	- 			, _,

Concentration

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V	Υ		(AVERAGE CONC)		Hill Heights (ZHILL)	Flagpole	Averagin Period	Source Group	Dank	Not ID	Data (DATE(CON)
Х	377567.3	3862722.74	[ug/m^3] 0.0854	(ZELEV) 843.4	(ZIIILL) 843.4	(ZFLAG)	(AVE) 5 24-HR	(GRP) ALL	Rank 1ST	Net ID	Date (DATE(CON) 11/5/2010 24 hr
	377994.15	3863339.75	0.08517		852.47		5 24-HR	ALL	1ST		1/29/2009 24 hr
	377542.36	3862722.68			843.36		5 24-HR	ALL	1ST		11/5/2010 24 hr
	377542.30	3862722.62			843.3		5 24-HR	ALL	1ST		11/5/2010 24 hr
	377492.48	3862722.56			843.45		5 24-HR	ALL	1ST		11/5/2010 24 hr
	377467.54	3862722.5	0.08339		843.73		5 24-HR	ALL	1ST		11/5/2010 24 hr
	377442.59	3862722.44	0.08283		844.01		5 24-HR	ALL	1ST		11/5/2010 24 hr
	377417.65	3862722.39	0.08228		844.27		5 24-HR	ALL	1ST		11/5/2010 24 hr
	377417.03	3862612.69			843.34		5 24-HR	ALL	1ST		11/5/2010 24 hr
	377969.8	3863339.73			852.96		5 24-HR	ALL	1ST		1/29/2009 24 hr
	377392.71	3862722.33			844.48		5 24-HR	ALL	1ST		11/5/2010 24 hr
	377367.77	3862722.27	0.08118		844.62		5 24-HR	ALL	1ST		11/5/2010 24 hr
	377342.83	3862722.21	0.08063		844.75		5 24-HR	ALL	1ST		11/5/2010 24 hr
	377317.89	3862722.15	0.08007		844.94		5 24-HR	ALL	1ST		11/5/2010 24 hr
	377292.95	3862722.09	0.07949		845.17		5 24-HR	ALL	1ST		11/5/2010 24 hr
	377268.01	3862722.04	0.07893		845.3		5 24-HR	ALL	1ST		11/5/2010 24 hr
	377945.44	3863339.72			853.51		5 24-HR	ALL	1ST		1/29/2009 24 hr
	377243.07	3862721.98			845.34		5 24-HR	ALL	1ST		11/5/2010 24 hr
	377192.53	3862870.02			848.59		5 24-HR	ALL	1ST		1/27/2011 24 hr
	377218.13	3862721.92			845.44		5 24-HR	ALL	1ST		11/5/2010 24 hr
	377192.42	3862894.72			849.11		5 24-HR	ALL	1ST		1/27/2011 24 hr
	377192.64	3862845.33	0.07771		848.05		5 24-HR	ALL	1ST		1/27/2011 24 hr
	377192.31	3862919.41	0.07746	849.62	849.62		5 24-HR	ALL	1ST		1/27/2011 24 hr
	377192.75	3862820.64	0.07741	847.5	847.5	1.5	5 24-HR	ALL	1ST		1/27/2011 24 hr
	377193.19	3862721.86	0.07723	845.52	845.52		5 24-HR	ALL	1ST		11/5/2010 24 hr
	377192.86	3862795.94	0.07712	846.98	846.98	1.5	5 24-HR	ALL	1ST		8/22/2011 24 hr
	377192.2	3862944.11	0.07696	850.09	850.09	1.5	5 24-HR	ALL	1ST		1/27/2011 24 hr
	377192.97	3862771.25	0.07683	846.48	846.48	1.5	5 24-HR	ALL	1ST		8/22/2011 24 hr
	377193.08	3862746.55	0.07641	846	846	1.5	5 24-HR	ALL	1ST		8/22/2011 24 hr
	377192.09	3862968.8	0.07624	850.61	850.61		5 24-HR	ALL	1ST		1/27/2011 24 hr
	377921.09	3863339.7	0.07617	853.63	853.63	1.5	5 24-HR	ALL	1ST		1/29/2009 24 hr
	377191.98	3862993.49	0.07529	851.15	851.15	1.5	5 24-HR	ALL	1ST		1/27/2011 24 hr
	377191.87	3863018.19	0.07413	851.71	851.71	1.5	5 24-HR	ALL	1ST		8/22/2011 24 hr
	377191.76	3863042.88	0.07355	852.26	852.26	1.5	5 24-HR	ALL	1ST		11/29/2010 24 hr
	377896.73	3863339.68	0.07351	853.63	853.63	1.5	5 24-HR	ALL	1ST		1/29/2009 24 hr
	377191.65	3863067.58	0.07325	852.81	852.81	1.5	5 24-HR	ALL	1ST		11/29/2010 24 hr
	377191.54	3863092.27	0.07275	853.38	853.38	1.5	5 24-HR	ALL	1ST		11/29/2010 24 hr
	377191.43	3863116.96	0.07205	853.97	853.97	1.5	5 24-HR	ALL	1ST		11/29/2010 24 hr
	377191.32	3863141.66	0.07116	854.59	854.59	1.5	5 24-HR	ALL	1ST		11/29/2010 24 hr
	377872.38	3863339.67	0.07077	853.8	853.8	1.5	5 24-HR	ALL	1ST		1/29/2009 24 hr
	377848.02	3863339.65	0.07037	853.97	853.97	1.5	5 24-HR	ALL	1ST		4/3/2013 24 hr
	377823.67	3863339.64	0.07012	854.13	854.13	1.5	5 24-HR	ALL	1ST		4/3/2013 24 hr
	377191.21	3863166.35	0.07008	855.24	855.24	1.5	5 24-HR	ALL	1ST		11/29/2010 24 hr
	377799.31	3863339.62	0.06987	854.4	854.4	1.5	5 24-HR	ALL	1ST		4/3/2013 24 hr
	377774.96	3863339.6	0.06961	854.72	854.72	1.5	5 24-HR	ALL	1ST		4/3/2013 24 hr
	377750.6	3863339.59	0.06935	854.97	854.97	1.5	5 24-HR	ALL	1ST		4/3/2013 24 hr
	377726.25	3863339.57	0.06911	855.05	855.05	1.5	5 24-HR	ALL	1ST		4/3/2013 24 hr
	377701.89	3863339.55	0.06886	855.21	855.21	1.5	5 24-HR	ALL	1ST		4/3/2013 24 hr
	377191.1	3863191.05	0.06883	855.94	855.94	1.5	5 24-HR	ALL	1ST		11/29/2010 24 hr
	377677.54	3863339.54	0.06861	855.49	855.49	1.5	5 24-HR	ALL	1ST		4/3/2013 24 hr
	377653.18	3863339.52	0.06836	855.76	855.76	1.5	5 24-HR	ALL	1ST		4/3/2013 24 hr
	377628.83	3863339.5	0.0681	856.02	856.02	1.5	5 24-HR	ALL	1ST		4/3/2013 24 hr
	377604.47	3863339.49			856.38	1.5	5 24-HR	ALL	1ST		4/3/2013 24 hr
	377190.99	3863215.74			856.65		5 24-HR	ALL	1ST		1/3/2013 24 hr
	377580.12	3863339.47	0.06758		856.7		5 24-HR	ALL	1ST		4/3/2013 24 hr
	377555.76	3863339.46			856.85		5 24-HR	ALL	1ST		4/3/2013 24 hr
	377531.41	3863339.44			856.93		5 24-HR	ALL	1ST		4/3/2013 24 hr
	377507.05	3863339.42			857.07		5 24-HR	ALL	1ST		4/3/2013 24 hr
	377190.88	3863240.43	0.06679		857.34		5 24-HR	ALL	1ST		1/3/2013 24 hr
	377482.7	3863339.41	0.06659				5 24-HR	ALL	1ST		4/3/2013 24 hr
	377458.34	3863339.39					5 24-HR	ALL	1ST		4/3/2013 24 hr
	377433.99	3863339.37			857.93		5 24-HR	ALL	1ST		4/3/2013 24 hr
	377409.63	3863339.36					5 24-HR	ALL	1ST		4/3/2013 24 hr
	377190.77	3863265.13					5 24-HR	ALL	1ST		1/3/2013 24 hr
	377385.28	3863339.34					5 24-HR	ALL	1ST		4/3/2013 24 hr
	377360.92	3863339.32					5 24-HR	ALL	1ST		4/3/2013 24 hr
	377336.57	3863339.31					5 24-HR	ALL	1ST		4/3/2013 24 hr
	377190.66	3863289.82					5 24-HR	ALL	1ST		4/3/2013 24 hr
	377312.21	3863339.29			858.64		5 24-HR	ALL	1ST		4/3/2013 24 hr
	377287.86	3863339.28			858.51		5 24-HR	ALL	1ST		4/3/2013 24 hr
	377263.5	3863339.26					5 24-HR	ALL	1ST		4/3/2013 24 hr
	377190.55	3863314.52			859.34		5 24-HR	ALL	1ST		4/3/2013 24 hr
	377239.15	3863339.24					5 24-HR	ALL	1ST		4/3/2013 24 hr
	377214.79	3863339.23					5 24-HR	ALL	1ST		4/3/2013 24 hr
	377190.44	3863339.21	0.06356	859.86	859.86	1.5	5 24-HR	ALL	1ST		4/3/2013 24 hr

			Concentration			PM2.5 Analysis					
			(AVERAGE CONC)	Elevation	Hill Heights	Flagpole	Averagin Period	Source Group			
Χ	Υ		[ug/m^3]	(ZELEV)	_	(ZFLAG)	(AVE)	(GRP)	Rank	Net ID	Date (DATE(CON)
	379591.83	3862730.47	0.82621	• *	•	-	5 24-HR	ALL	1ST		1/5/2009 24 hr
	379592.07	3862754.91	0.82567	824.31	824.31	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	379616.81	3862730.35	0.8244	823.69	823.69	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	379592.3	3862779.35	0.82365				5 24-HR	ALL	1ST		1/5/2009 24 hr
	379592.54	3862803.79	0.82145				24-HR	ALL	1ST		1/5/2009 24 hr
	379641.8	3862730.23	0.82101	823.3			5 24-HR	ALL	1ST		1/5/2009 24 hr
	379592.78	3862828.23	0.81955				5 24-HR	ALL	1ST		1/5/2009 24 hr
	379666.78 379593.02	3862730.11 3862852.67	0.81749 0.81666		822.91 826.2		5 24-HR 5 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/5/2009 24 hr
	379691.76	3862729.99	0.8144				5 24-HR	ALL	1ST		1/5/2009 24 hr
	379593.25	3862877.11	0.81311	826.63			5 24-HR	ALL	1ST		1/5/2009 24 hr
	379716.75	3862729.86	0.81159				5 24-HR	ALL	1ST		1/5/2009 24 hr
	379593.49	3862901.55	0.80924				5 24-HR	ALL	1ST		1/5/2009 24 hr
	379741.73	3862729.74	0.80897	822.13	822.13	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	379766.72	3862729.62	0.80721	822.06	822.06	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	379791.7	3862729.5	0.80589	822.06	822.06	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	379593.73	3862925.99	0.80484				5 24-HR	ALL	1ST		1/5/2009 24 hr
	379816.68	3862729.38	0.80352				5 24-HR	ALL	1ST		1/5/2009 24 hr
	379841.67	3862729.26	0.80131				5 24-HR	ALL	1ST		1/5/2009 24 hr
	379593.97	3862950.42	0.79971				5 24-HR	ALL	1ST		1/5/2009 24 hr
	379866.65	3862729.14	0.79921	821.43			5 24-HR	ALL	1ST		1/5/2009 24 hr
	379891.63 379941.6	3862729.02 3862728.78	0.79731 0.79557	821.18 820.99	821.18 820.99		5 24-HR 5 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/5/2009 24 hr
	379916.62	3862728.9	0.79535		820.99		5 24-HR	ALL	1ST		1/5/2009 24 hr
	379966.58	3862728.65	0.79516				5 24-HR	ALL	1ST		1/5/2009 24 hr
	379991.57	3862728.53	0.79311	820.62			5 24-HR	ALL	1ST		1/5/2009 24 hr
	379594.2	3862974.86	0.79269				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380016.55	3862728.41	0.79065				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380041.53	3862728.29	0.78869				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380066.52	3862728.17	0.78547	819.42	819.42	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	380091.5	3862728.05	0.78407	819.12	819.12	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	379594.44	3862999.3	0.78381	829.4	829.4	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	380116.49	3862727.93	0.78237			1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	380141.47	3862727.81	0.78096				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380166.45	3862727.69	0.77964				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380191.44	3862727.57	0.77819				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380216.42	3862727.44	0.77683				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380241.4	3862727.32	0.77561				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380266.39 380291.37	3862727.2 3862727.08	0.77488 0.77388				5 24-HR 5 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/5/2009 24 hr
	380516.22	3862725.99	0.773				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380541.21	3862725.87	0.77298				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380316.35	3862726.96	0.77293				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380566.19	3862725.75	0.77279				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380491.24	3862726.11	0.7727				5 24-HR	ALL	1ST		1/5/2009 24 hr
	379594.68	3863023.74	0.77259	829.93	829.93	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	380341.34	3862726.84	0.77241	815.75	815.75	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	380366.32	3862726.72	0.77226	815.74	815.74	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	380391.31	3862726.6	0.77225				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380466.26	3862726.23	0.77214				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380441.27	3862726.35	0.77193				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380591.17	3862725.63	0.77192				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380416.29 380616.16	3862726.48 3862725.51	0.77157 0.77118				5 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/5/2009 24 hr
	380641.14	3862725.31	0.77118				5 24-HR 5 24-HR	ALL	1ST		1/5/2009 24 hr
	380666.13	3862725.27	0.76977				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380691.11	3862725.14	0.76887				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380716.09	3862725.02	0.768				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380741.08	3862724.9	0.76736				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380766.06	3862724.78					5 24-HR	ALL	1ST		1/5/2009 24 hr
	380791.04	3862724.66	0.76631	813.55	813.55	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	380816.03	3862724.54	0.7655	813.21	813.21	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	380841.01	3862724.42	0.76521			1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	380865.99	3862724.3	0.76475				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380890.98	3862724.18	0.76428				24-HR	ALL	1ST		1/5/2009 24 hr
	380915.96	3862724.06	0.76386				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380940.94	3862723.93	0.76327				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380965.93	3862723.81	0.76253				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380990.91 381015.9	3862723.69 3862723.57	0.76174				5 24-HR 5 24-HP	ALL ALL	1ST 1ST		1/5/2009 24 hr
	381015.9	3862723.57	0.76086 0.75972				5 24-HR 5 24-HR	ALL	1ST		1/5/2009 24 hr 1/5/2009 24 hr
	379594.91	3863048.18	0.75945				5 24-HR	ALL	1ST		1/5/2009 24 hr
	381065.86	3862723.33	0.75823				5 24-HR	ALL	1ST		1/5/2009 24 hr
	381090.85	3862723.21	0.75632				5 24-HR	ALL	1ST		1/5/2009 24 hr
	381115.83	3862723.09	0.75405				5 24-HR	ALL	1ST		1/5/2009 24 hr

					PM2.5 Analysis						
			Concentration (AVERAGE CONC)	Elevation	Hill Heights	Flagpole	Averagin Period	Source Group			
Х	Υ		[ug/m^3]	(ZELEV)	(ZHILL)	(ZFLAG)	(AVE)	(GRP)	Rank	Net ID	Date (DATE(CON)
	381140.81	3862722.97	- -		,		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381165.8	3862722.85					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379595.15	3863072.62					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381190.78	3862722.72	0.74235	810.3	3 810.33	3	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381215.76	3862722.6	0.73659	810.	4 810.4	1	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381240.75	3862722.48	0.72973	810.4	7 810.47	7	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379595.39	3863097.06	0.72935	831.4	1 831.43	L	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381265.73	3862722.36	0.72181	810.5	3 810.53	3	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	384441.38	3864178.21					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384440.91	3864129.33	0.71833				1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384440.67	3864104.89					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384441.15	3864153.77	0.71797				1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384440.43	3864080.46					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384440.2	3864056.02					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384441.62 384439.96	3864202.65 3864031.58					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/27/2009 24 hr 1/27/2009 24 hr
	384439.72	3864007.14					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384441.86	3864227.09					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384439.49	3863982.7					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	381290.72	3862722.24	0.71311				1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379595.63	3863121.5	0.71296				1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	384439.25	3863958.26	0.71069	812.2			1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384442.1	3864251.53	0.70991	816.4	5 816.45	5	1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384439.01	3863933.82	0.70747	811.9	2 811.92	2	1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384442.33	3864275.97	0.70556	816.4	8 816.48	3	1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384438.77	3863909.38	0.70427	811.9	7 811.97	7	1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	381315.7	3862722.12	0.70339	810.8	2 810.82	<u>)</u>	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	384218.44	3864302.95	0.7028				1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384342.96	3864301.54					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384243.35	3864302.67	0.70255				1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384318.06	3864301.82					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384367.86	3864301.26					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384193.54	3864303.23	0.70184				1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384392.76 384268.25	3864300.97 3864302.39	0.70172 0.70171				1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/27/2009 24 hr 1/27/2009 24 hr
	384293.15	3864302.39					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384168.64	3864303.52					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	379539.8	3862794.96					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	384417.67	3864300.69					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384438.54	3863884.94					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384143.74	3864303.8					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	379595.86	3863145.94	0.69549	832.3	6 832.36	5	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	384118.83	3864304.08	0.69498	818.9	9 818.99)	1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	381340.68	3862722	0.69243	810.4	8 810.48	3	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	384438.3	3863860.5					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384442.57	3864300.41					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	380406.16	3863548.72					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	384093.93	3864304.36					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	382015.24	3863333.39					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379542.54	3862885.33	0.68922				1.5 24-HR	ALL	1ST 1ST		1/5/2009 24 hr
	384069.03 384044.12	3864304.65 3864304.93					1.5 24-HR 1.5 24-HR	ALL ALL	1ST		1/27/2009 24 hr 1/27/2009 24 hr
	384019.22	3864305.21					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	383994.32	3864305.49					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384438.06	3863836.06					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	381365.67	3862721.88					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	383969.42	3864305.78					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	383944.51	3864306.06	0.67631	818.9	9 818.99)	1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	379596.1	3863170.38	0.6761	832.79	9 832.79)	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	383919.61	3864306.34	0.67155	818.8	3 818.83	3	1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	381390.65	3862721.76	0.66988	809.9	2 809.92	<u>)</u>	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	384437.82	3863811.62					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	382038.73	3863332.41					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	383894.71	3864306.62					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	383869.8	3864306.91					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	383844.9	3864307.19					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	382062.22 383820	3863331.43 3864307.47	0.66278 0.66207				1.5 24-HR	ALL	1ST 1ST		1/5/2009 24 hr
	383820 380405.91	3864307.47 3863573.43	0.66207				1.5 24-HR 1.5 24-HR	ALL ALL	151 1ST		1/27/2009 24 hr 1/5/2009 24 hr
	381415.63	3862721.63	0.66034				1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	383795.09	3864307.75					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	382085.71	3863330.46					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379596.34	3863194.82					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	383770.19	3864308.04					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384437.59	3863787.18	0.65345			1	1.5 24-HR	ALL	1ST		1/27/2009 24 hr

			Concentration			PM2.5 Analysis					
			Concentration (AVERAGE CONC)	Elevation	Hill Heights	Flagpole	Averagin Period	Source Group			
Х	Υ		[ug/m^3]	(ZELEV)	(ZHILL)	(ZFLAG)	(AVE)	(GRP)	Rank	Net ID	Date (DATE(CON)
,	383745.29	3864308.32	0.65298	•	•	•	5 24-HR	ALL	1ST	110115	1/27/2009 24 hr
	382109.2	3863329.48	0.65161				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383720.39	3864308.6	0.65079	819.63	819.63	1.5	5 24-HR	ALL	1ST		1/27/2009 24 hr
	381440.62	3862721.51	0.65027	810.01	810.01	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	383670.58	3864309.17	0.65006	821.19	821.19	1.5	5 24-HR	ALL	1ST		1/27/2009 24 hr
	383695.48	3864308.88	0.64986	820.25	820.25	1.5	5 24-HR	ALL	1ST		1/27/2009 24 hr
	383645.68	3864309.45	0.64797	821.49	821.49	1.5	5 24-HR	ALL	1ST		1/27/2009 24 hr
	384136.23	3863498.97	0.64578	807.78	807.78	1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	384161.11	3863498.55	0.64578	807.86	807.86	1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	384061.61	3863500.23	0.6456	808.2	808.2	1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	384111.36	3863499.39	0.6455	807.95	807.95	1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	384086.48	3863499.81	0.64546	808.08	808.08	1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	383620.77	3864309.73	0.64499	821.62	821.62	1.5	5 24-HR	ALL	1ST		1/27/2009 24 hr
	384185.98	3863498.13	0.6449				5 24-HR	ALL	1ST		12/23/2013 24 hr
	384011.86	3863501.08	0.64471				5 24-HR	ALL	1ST		12/23/2013 24 hr
	384036.73	3863500.65	0.64471				5 24-HR	ALL	1ST		12/23/2013 24 hr
	383986.98	3863501.5	0.64452				5 24-HR	ALL	1ST		12/23/2013 24 hr
	382132.69	3863328.5	0.6438				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383962.1	3863501.92	0.64353				5 24-HR	ALL	1ST		12/23/2013 24 hr
	384210.86	3863497.7	0.64343				5 24-HR	ALL	1ST		12/23/2013 24 hr
	384235.74	3863497.28	0.64321				5 24-HR	ALL	1ST		12/23/2013 24 hr
	383937.23	3863502.34	0.64304				5 24-HR	ALL	1ST		12/23/2013 24 hr
	383595.87	3864310.01	0.64237				5 24-HR	ALL	1ST		1/27/2009 24 hr
	380405.67	3863598.15	0.64222				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383912.35	3863502.76	0.64218				5 24-HR	ALL	1ST		12/23/2013 24 hr
	381490.58	3862721.27	0.64199				5 24-HR	ALL	1ST		12/16/2013 24 hr
	381590.52	3862720.79	0.64182				5 24-HR	ALL	1ST		12/16/2013 24 hr
	381515.57	3862721.15	0.64162				5 24-HR	ALL	1ST		12/16/2013 24 hr
	381615.5	3862720.67	0.64162				5 24-HR	ALL	1ST		12/16/2013 24 hr
	381465.6	3862721.39	0.64161				5 24-HR	ALL	1ST		12/16/2013 24 hr
	384260.61	3863496.86	0.64158				5 24-HR	ALL	1ST		12/23/2013 24 hr
	383887.48 381540.55	3863503.18	0.6415 0.6414				5 24-HR	ALL	1ST 1ST		12/23/2013 24 hr 12/16/2013 24 hr
		3862721.03 3862720.91					5 24-HR	ALL	1ST		
	381565.54 383862.6	3863503.61	0.64098 0.64055				5 24-HR 5 24-HR	ALL ALL	1ST		12/16/2013 24 hr 12/23/2013 24 hr
	381640.49	3862720.55	0.64026				5 24-HR	ALL	1ST		12/25/2013 24 hr
	384285.49	3863496.44	0.64019				5 24-HR	ALL	1ST		12/23/2013 24 hr
	383837.73	3863504.03	0.63976				5 24-HR	ALL	1ST		12/23/2013 24 hr
	383570.97	3864310.3	0.63952				5 24-HR	ALL	1ST		1/27/2009 24 hr
	381665.47	3862720.42					5 24-HR	ALL	1ST		12/16/2013 24 hr
	383812.85	3863504.45	0.63865				5 24-HR	ALL	1ST		12/23/2013 24 hr
	384310.36	3863496.02	0.63815				5 24-HR	ALL	1ST		12/23/2013 24 hr
	383787.98	3863504.87	0.63754				5 24-HR	ALL	1ST		12/23/2013 24 hr
	383546.07	3864310.58	0.63698				5 24-HR	ALL	1ST		1/27/2009 24 hr
	381690.45	3862720.3	0.63671				5 24-HR	ALL	1ST		12/16/2013 24 hr
	383713.35	3863506.13	0.63644				5 24-HR	ALL	1ST		12/23/2013 24 hr
	383763.1	3863505.29	0.6362				5 24-HR	ALL	1ST		12/23/2013 24 hr
	383738.22	3863505.71	0.63579				5 24-HR	ALL	1ST		12/23/2013 24 hr
	383688.47	3863506.56	0.63566				5 24-HR	ALL	1ST		12/23/2013 24 hr
	379596.58	3863219.26	0.63547	833.57	833.57		5 24-HR	ALL	1ST		1/5/2009 24 hr
	381715.44	3862720.18	0.63499	809.17	809.17	1.5	5 24-HR	ALL	1ST		12/16/2013 24 hr
	384335.24	3863495.6	0.63484	809.31	809.31	1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	384437.35	3863762.74	0.63454	811.77	811.77	1.5	5 24-HR	ALL	1ST		1/27/2009 24 hr
	383521.16	3864310.86	0.63431	822.49	822.49	1.5	5 24-HR	ALL	1ST		1/27/2009 24 hr
	383663.6	3863506.98	0.63423	813.04	813.04	1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	381740.42	3862720.06	0.63312	809.11	809.11	1.5	5 24-HR	ALL	1ST		12/16/2013 24 hr
	383638.72	3863507.4	0.63257	813.14	813.14	1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	383496.26	3864311.14	0.63156	822.69	822.69	1.5	5 24-HR	ALL	1ST		1/27/2009 24 hr
	381765.4	3862719.94	0.63155	809.28	809.28	1.5	5 24-HR	ALL	1ST		12/16/2013 24 hr
	383613.85	3863507.82	0.63062	813.3	813.3	1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	382156.18	3863327.52	0.63047	815.24	815.24	1.5	5 24-HR	ALL	1ST		1/5/2009 24 hr
	381790.39	3862719.82	0.62939	809.45	809.45	1.5	5 24-HR	ALL	1ST		12/16/2013 24 hr
	384360.11	3863495.17	0.62869	809.07	809.07	1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	383471.36	3864311.43	0.62866	822.9	822.9	1.5	5 24-HR	ALL	1ST		1/27/2009 24 hr
	383588.97	3863508.24	0.62863			1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	383564.1	3863508.66	0.62788			1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	381815.37	3862719.7					5 24-HR	ALL	1ST		12/16/2013 24 hr
	383539.22	3863509.09	0.62644	813.9	813.9	1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	383446.45	3864311.71	0.62574				5 24-HR	ALL	1ST		1/27/2009 24 hr
	380405.42	3863622.86					5 24-HR	ALL	1ST		1/5/2009 24 hr
	383514.35	3863509.51	0.62462			1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr
	382418.49	3863525.23	0.62344				5 24-HR	ALL	1ST		1/5/2009 24 hr
	381840.35	3862719.58	0.62291				5 24-HR	ALL	1ST		12/16/2013 24 hr
	383421.55	3864311.99	0.62259				5 24-HR	ALL	1ST		1/27/2009 24 hr
	383489.47	3863509.93	0.62244	813.91	813.91	1.5	5 24-HR	ALL	1ST		12/23/2013 24 hr

			Canacatatica			PM2.5 Analysis	S				
			Concentration (AVERAGE CONC)	Elevation	Hill Heights	Flagpole	Averagin Period	Source Group			
Χ	Υ		[ug/m^3]	(ZELEV)	(ZHILL)	(ZFLAG)	(AVE)	(GRP)	Rank	Net ID	Date (DATE(CON)
Λ.	383464.59	3863510.35	0.62051	•	•		5 24-HR	ALL	1ST	Netro	12/23/2013 24 hr
	383396.65	3864312.27	0.61967				5 24-HR	ALL	1ST		1/27/2009 24 hr
	381865.34	3862719.46	0.61964				5 24-HR	ALL	1ST		12/16/2013 24 hr
	384384.99	3863494.75	0.61908				5 24-HR	ALL	1ST		12/23/2013 24 hr
	380381.72	3863548.36	0.61844				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383439.72	3863510.77	0.61836				5 24-HR	ALL	1ST		12/23/2013 24 hr
	383414.84	3863511.19	0.61643				5 24-HR	ALL	1ST		12/23/2013 24 hr
	383371.75	3864312.56	0.61637	823.52	823.52	1.	5 24-HR	ALL	1ST		1/27/2009 24 hr
	382532.03	3863415.61	0.61636	814.14	814.14	1.	5 24-HR	ALL	1ST		1/5/2009 24 hr
	382556.17	3863415.61	0.61603	813.98	813.98	1.	5 24-HR	ALL	1ST		1/5/2009 24 hr
	382580.32	3863415.61	0.61522	813.81	813.81	1.	5 24-HR	ALL	1ST		1/5/2009 24 hr
	383389.97	3863511.61	0.61452	814	814	1.	5 24-HR	ALL	1ST		12/23/2013 24 hr
	381890.32	3862719.34	0.61449	809.37	809.37	1.	5 24-HR	ALL	1ST		12/16/2013 24 hr
	382604.46	3863415.61	0.61421	813.65	813.65	1.	5 24-HR	ALL	1ST		1/5/2009 24 hr
	379596.81	3863243.7	0.61413	833.94			5 24-HR	ALL	1ST		1/5/2009 24 hr
	383346.84	3864312.84	0.61324				5 24-HR	ALL	1ST		1/27/2009 24 hr
	383365.09	3863512.04	0.61302				5 24-HR	ALL	1ST		12/23/2013 24 hr
	382628.6	3863415.61	0.61267				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383340.22	3863512.46	0.61219				5 24-HR	ALL	1ST		12/23/2013 24 hr
	384437.11	3863738.3	0.61209				5 24-HR	ALL	1ST		1/27/2009 24 hr
	382817.83	3863521.31	0.61118				5 24-HR	ALL	1ST		1/5/2009 24 hr
	382179.67	3863326.54	0.61067				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383315.34	3863512.88	0.61056				5 24-HR	ALL	1ST		12/23/2013 24 hr
	383321.94	3864313.12	0.61018				5 24-HR	ALL	1ST		1/27/2009 24 hr
	384436.88	3863713.86	0.6098				5 24-HR	ALL	1ST		2/1/2013 24 hr
	382528.11	3863435.18	0.60941				5 24-HR	ALL	1ST 1ST		1/5/2009 24 hr
	382440.3 382652.74	3863524.11 3863415.61	0.60929 0.60928				5 24-HR 5 24-HR	ALL ALL	1ST		1/5/2009 24 hr 1/5/2009 24 hr
	381915.31	3862719.21	0.60928				5 24-HR		1ST		1/3/2009 24 III 12/16/2013 24 hr
	383290.47	3863513.3	0.6089				5 24-HR	ALL ALL	1ST		12/10/2013 24 hr
	380405.18	3863647.58	0.60868				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383297.04	3864313.4					5 24-HR	ALL	1ST		1/27/2009 24 hr
	383265.59	3863513.72					5 24-HR	ALL	1ST		12/23/2013 24 hr
	383240.71	3863514.14	0.60608				5 24-HR	ALL	1ST		12/23/2013 24 hr
	382015.24	3863308.8	0.60537				5 24-HR	ALL	1ST		1/5/2009 24 hr
	384436.64	3863689.43	0.60511				5 24-HR	ALL	1ST		2/1/2013 24 hr
	382538.88	3863455.74	0.60497				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383215.84	3863514.57	0.60481				5 24-HR	ALL	1ST		12/23/2013 24 hr
	383272.13	3864313.69	0.60462				5 24-HR	ALL	1ST		1/27/2009 24 hr
	382462.12	3863522.99	0.60376	815.96	815.96	1.	5 24-HR	ALL	1ST		1/5/2009 24 hr
	383190.96	3863514.99	0.60308	816.7	816.7	1.	5 24-HR	ALL	1ST		12/23/2013 24 hr
	384409.86	3863494.33	0.60197	808.51	808.51	1.	5 24-HR	ALL	1ST		12/23/2013 24 hr
	383247.23	3864313.97	0.60179	824.72	824.72	1.	5 24-HR	ALL	1ST		1/27/2009 24 hr
	383166.09	3863515.41	0.60122	816.89	816.89	1.	5 24-HR	ALL	1ST		12/23/2013 24 hr
	382676.89	3863415.61	0.60118	813.56	813.56	1.	5 24-HR	ALL	1ST		1/5/2009 24 hr
	382549.65	3863476.29	0.60064	814.7	814.7	1.	5 24-HR	ALL	1ST		1/5/2009 24 hr
	381940.29	3862719.09	0.60034				5 24-HR	ALL	1ST		12/16/2013 24 hr
	382483.93	3863521.87	0.60022				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383222.33	3864314.25	0.59973				5 24-HR	ALL	1ST		1/27/2009 24 hr
	382842.71	3863520.89	0.59943				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383141.21	3863515.83	0.59941				5 24-HR	ALL	1ST		12/23/2013 24 hr
	382505.74	3863520.76	0.59762				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383116.34	3863516.25	0.59747				5 24-HR	ALL	1ST		12/23/2013 24 hr
	383197.43 384436.4	3864314.53 3863664.99	0.59728 0.59693				5 24-HR	ALL ALL	1ST 1ST		1/27/2009 24 hr 2/1/2013 24 hr
	382560.41	3863496.84	0.59682				5 24-HR 5 24-HR	ALL	1ST		1/5/2009 24 hr
	382527.55	3863519.64	0.59552				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383091.46	3863516.67	0.59506				5 24-HR	ALL	1ST		1/3/2009 24 III 12/23/2013 24 hr
	383172.52	3864314.82	0.59379				5 24-HR	ALL	1ST		1/27/2009 24 hr
	382549.37	3863518.52					5 24-HR	ALL	1ST		1/5/2009 24 hr
	382867.58	3863520.47					5 24-HR	ALL	1ST		1/5/2009 24 hr
	383066.59	3863520.47					5 24-HR	ALL	1ST		12/23/2013 24 hr
	382406.35	3863504.87	0.59254				5 24-HR	ALL	1ST		1/27/2009 24 hr
	382571.18	3863517.4	0.59246				5 24-HR	ALL	1ST		1/5/2009 24 hr
	380404.93	3863672.29					5 24-HR	ALL	1ST		1/5/2009 24 hr
	379597.05	3863268.14	0.59164				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383041.71	3863517.52					5 24-HR	ALL	1ST		12/23/2013 24 hr
	382892.46	3863520.05	0.58998				5 24-HR	ALL	1ST		1/5/2009 24 hr
	383147.62	3864315.1	0.58967				5 24-HR	ALL	1ST		1/27/2009 24 hr
	381965.27	3862718.97	0.5886	808.88	808.88	1.	5 24-HR	ALL	1ST		12/16/2013 24 hr
	382917.33	3863519.62	0.58726	815.34	815.34	1.	5 24-HR	ALL	1ST		1/5/2009 24 hr
	383016.83	3863517.94	0.5871	816.51	. 816.51	. 1.	5 24-HR	ALL	1ST		12/23/2013 24 hr
	382701.03	3863415.61	0.58628	814.39	814.39	1.	5 24-HR	ALL	1ST		1/5/2009 24 hr
	382394.22	3863484.51	0.58624				5 24-HR	ALL	1ST		1/27/2009 24 hr
	382942.21	3863519.2	0.58532	815.43	815.43	1.	5 24-HR	ALL	1ST		1/5/2009 24 hr

						PM2.5 Analysis					
			Concentration (AVERAGE CONC)	Elevation	Hill Hoights	Elagnolo	Averagin Period	Source Group			
Х	Υ		[ug/m^3]	Elevation (ZELEV)	Hill Heights (ZHILL)	Flagpole (ZFLAG)	Averagin Period (AVE)	Source Group (GRP)	Rank	Net ID	Date (DATE(CON)
^	383122.72	3864315.38	- -	-	•	` '	1.5 24-HR	ALL	1ST	Netib	1/27/2009 24 hr
	382203.16	3863325.56					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	382967.08	3863518.78					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	384436.16	3863640.55					1.5 24-HR	ALL	1ST		2/1/2013 24 hr
	382991.96	3863518.36	0.58379	816.09	816.09)	1.5 24-HR	ALL	1ST		12/23/2013 24 hr
	381226.48	3864576.14	0.58174	835.73	835.73	3	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381226.4	3864551.53	0.58174	835.48	835.48	3	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381226.56	3864600.75					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381226.64	3864625.36					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	382382.08	3863464.16					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	381226.32	3864526.92					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	383097.81	3864315.66					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	381226.24 381226.72	3864502.31 3864649.96					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/5/2009 24 hr
	383072.91	3864315.95					1.5 24-HR	ALL	1ST		1/3/2009 24 hr
	381226.16	3864477.7					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	382369.94	3863443.8					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	380404.69	3863697					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	383048.01	3864316.23	0.57359			ļ	1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	381224.4	3863936.31	0.57354	827.95	827.95	5	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381226.8	3864674.57	0.57312	836.94	836.94	ļ	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381226.08	3864453.09	0.57282	834.38	834.38	3	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380357.28	3863548.01					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	382357.8	3863423.44					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	381226	3864428.49					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	383023.11	3864316.51					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	379597.29	3863292.58					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381226.88	3864699.18					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381225.92 382725.17	3864403.88 3863415.61					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/5/2009 24 hr
	381224.48	3863960.92					1.5 24-HR 1.5 24-HR	ALL	1ST		1/3/2009 24 III 12/20/2012 24 hr
	382998.2	3864316.79					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384435.93	3863616.11					1.5 24-HR	ALL	1ST		2/1/2013 24 hr
	381226.96	3864723.79					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381990.26	3862718.85					1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	381225.84	3864379.27	0.56323	833.45	833.45	5	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	382345.67	3863403.08	0.56238	815.78	815.78	3	1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	381224.56	3863985.53	0.56198	828.39	828.39)	1.5 24-HR	ALL	1ST		12/20/2012 24 hr
	381227.04	3864748.4	0.56088				1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	382973.3	3864317.08					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	382226.65	3863324.58					1.5 24-HR	ALL	1ST		12/23/2013 24 hr
	381225.76	3864354.66					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381224.64 382818.61	3864010.14 3863500.17					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		12/20/2012 24 hr 1/27/2009 24 hr
	380404.45	3863721.72					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	384434.74	3863493.91					1.5 24-HR	ALL	1ST		12/23/2013 24 hr
	384434.98	3863518.35					1.5 24-HR	ALL	1ST		12/23/2013 24 hr
	382015.24	3863284.22	0.5569			<u>)</u>	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381225.68	3864330.05	0.55679	832.74	832.74	1	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381224.72	3864034.75	0.55598	829	829)	1.5 24-HR	ALL	1ST		12/20/2012 24 hr
	382948.4	3864317.36	0.55588	826.79	826.79)	1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	384435.21	3863542.79					1.5 24-HR	ALL	1ST		12/23/2013 24 hr
	381225.6	3864305.44					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381227.12	3864773.01					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	384435.45	3863567.23					1.5 24-HR	ALL	1ST 1ST		12/23/2013 24 hr
	382250.14 381224.8	3863323.61 3864059.35					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		12/23/2013 24 hr 12/20/2012 24 hr
	381225.52	3864280.83					1.5 24-HR 1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381225.44	3864256.22					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	384435.69	3863591.67					1.5 24-HR	ALL	1ST		12/23/2013 24 hr
	382923.49	3864317.64					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	381225.36	3864231.62					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381224.88	3864083.96					1.5 24-HR	ALL	1ST		12/20/2012 24 hr
	381225.28	3864207.01	0.54936	831.38	831.38	3	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381224.96	3864108.57	0.54851	830.06	830.06	5	1.5 24-HR	ALL	1ST		12/20/2012 24 hr
	381225.2	3864182.4					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381225.12	3864157.79					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381225.04	3864133.18					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	382333.53	3863382.72					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	382898.59	3864317.92					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	379597.52 381227.2	3863317.02 3864797.62					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/5/2009 24 hr
	381227.2	3864318.21					1.5 24-HR 1.5 24-HR	ALL	151 1ST		1/3/2009 24 hr
	382749.31	3863415.61					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380404.2	3863746.43					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
		· · · ·									. •

			Concontration			PM2.5 Analys	iis				
			Concentration (AVERAGE CONC)	Elevation	Hill Heights	Flagpole	Averagin Period	Source Group			
Х	Υ	([ug/m^3]	(ZELEV)	(ZHILL)	(ZFLAG)	(AVE)	(GRP)	Rank	Net ID	Date (DATE(CON)
^	382273.63	3863322.63	0.53824	· ·	•		5 24-HR	ALL	1ST		12/23/2013 24 hr
	382819.39	3863479.03					5 24-HR	ALL	1ST		1/27/2009 24 hr
	380332.84	3863547.65					5 24-HR	ALL	1ST		1/5/2009 24 hr
	382848.79	3864318.49					5 24-HR	ALL	1ST		1/27/2009 24 hr
	381797.92	3862684.14					5 24-HR	ALL	1ST		12/16/2013 24 hr
	381952.11	3865138.6					5 24-HR	ALL	1ST		12/18/2013 24 hr
	382823.88	3864318.77					5 24-HR	ALL	1ST		1/27/2009 24 hr
	381927.16	3865138.72					5 24-HR	ALL	1ST		12/18/2013 24 hr
	381977.07	3865138.47					5 24-HR	ALL	1ST		12/18/2013 24 hr
	381902.2	3865138.84					5 24-HR	ALL	1ST		12/18/2013 24 hr
	382798.98	3864319.05	0.52718	827.13	827.13	3 1	5 24-HR	ALL	1ST		1/27/2009 24 hr
	381877.24	3865138.96					5 24-HR	ALL	1ST		12/18/2013 24 hr
	382015.24	3863259.63					5 24-HR	ALL	1ST		1/27/2009 24 hr
	379597.76	3863341.45	0.52294			2 1	5 24-HR	ALL	1ST		1/5/2009 24 hr
	382002.03	3865138.35	0.52284	839.68	839.68	3 1	5 24-HR	ALL	1ST		12/18/2013 24 hr
	381227.28	3864822.23	0.52277	838.52	838.52	2 1	5 24-HR	ALL	1ST		1/5/2009 24 hr
	382026.99	3865015.44	0.52263	838.2	838.2	2 1	5 24-HR	ALL	1ST		12/18/2013 24 hr
	382774.08	3864319.34	0.52244	827.26	827.26	5 1	5 24-HR	ALL	1ST		1/27/2009 24 hr
	381852.28	3865139.09	0.52234	839.57	839.57	7 1	5 24-HR	ALL	1ST		12/18/2013 24 hr
	382026.99	3864990.88	0.52127	837.88	837.88	3 1	5 24-HR	ALL	1ST		12/18/2013 24 hr
	382026.99	3865040	0.521	838.46	838.46	5 1	5 24-HR	ALL	1ST		12/18/2013 24 hr
	382015.24	3863235.04	0.52053	814.45	814.45	5 1	5 24-HR	ALL	1ST		1/27/2009 24 hr
	380403.95	3863771.14	0.51911	833.95			5 24-HR	ALL	1ST		1/5/2009 24 hr
	382026.99	3865064.56					5 24-HR	ALL	1ST		12/18/2013 24 hr
	381827.32	3865139.21					5 24-HR	ALL	1ST		12/18/2013 24 hr
	382749.17	3864319.62					5 24-HR	ALL	1ST		1/27/2009 24 hr
	382321.39	3863362.37					5 24-HR	ALL	1ST		1/27/2009 24 hr
	382015.24	3863210.46					5 24-HR	ALL	1ST		1/27/2009 24 hr
	382026.99	3864966.32					5 24-HR	ALL	1ST		12/18/2013 24 hr
	382820.18	3863457.89					5 24-HR	ALL	1ST		2/1/2013 24 hr
	382724.27	3864319.9					5 24-HR	ALL	1ST		1/27/2009 24 hr
	382026.99	3864941.76					5 24-HR	ALL	1ST		12/18/2013 24 hr
	382015.24	3863185.87					5 24-HR	ALL	1ST		1/27/2009 24 hr
	382026.99	3865089.11					5 24-HR	ALL	1ST		12/18/2013 24 hr
	382026.99	3864917.21					5 24-HR	ALL	1ST		12/18/2013 24 hr
	381199.49	3863936.55					5 24-HR	ALL	1ST		1/5/2009 24 hr
	382699.37	3864320.18					5 24-HR	ALL	1ST		1/27/2009 24 hr
	380308.4	3863547.3					5 24-HR	ALL	1ST		1/5/2009 24 hr
	382015.24	3862718.73					5 24-HR	ALL	1ST		12/23/2013 24 hr
	382015.24	3862743.32					5 24-HR	ALL	1ST		12/23/2013 24 hr
	382015.24	3863161.29					5 24-HR	ALL	1ST		1/27/2009 24 hr
	382773.46	3863415.61					5 24-HR	ALL	1ST		1/5/2009 24 hr
	382026.99	3864892.65	0.50528	836.75	836.75		5 24-HR	ALL	1ST		12/18/2013 24 hr
	382015.24	3862767.9					5 24-HR	ALL	1ST		12/23/2013 24 hr
	382026.99	3865113.67	0.5038	839.37	839.37	7 1	5 24-HR	ALL	1ST		12/18/2013 24 hr
	382026.99	3864868.09	0.50232	836.44	836.44	1	5 24-HR	ALL	1ST		12/18/2013 24 hr
	382015.24	3862792.49	0.5023	809.37	809.37	7 1	5 24-HR	ALL	1ST		12/23/2013 24 hr
	382674.47	3864320.47	0.50207	827.46	827.46	5 1	5 24-HR	ALL	1ST		1/27/2009 24 hr
	381227.36	3864846.83	0.50151	838.79	838.79) 1	5 24-HR	ALL	1ST		1/5/2009 24 hr
	379598	3863365.89	0.50022	836.35	836.35	5 1	5 24-HR	ALL	1ST		1/5/2009 24 hr
	381802.36	3865139.33	0.49997	839.66	839.66	5 1	5 24-HR	ALL	1ST		12/18/2013 24 hr
	382015.24	3862817.08	0.49948	809.58	809.58	3 1	5 24-HR	ALL	1ST		12/23/2013 24 hr
	382026.99	3864843.53	0.49886	836.11	836.11	. 1	5 24-HR	ALL	1ST		12/18/2013 24 hr
	382015.24	3863136.7	0.49812	813.45	813.45	5 1	5 24-HR	ALL	1ST		1/27/2009 24 hr
	380403.71	3863795.86	0.49691	834.45	834.45	5 1	5 24-HR	ALL	1ST		1/5/2009 24 hr
	382649.56	3864320.75	0.49682	827.48	827.48	3 1	5 24-HR	ALL	1ST		1/27/2009 24 hr
	382015.24	3862841.66	0.49608	809.82	809.82	2 1	5 24-HR	ALL	1ST		12/23/2013 24 hr
	382026.99	3865138.23	0.49516	839.73	839.73	3 1	5 24-HR	ALL	1ST		12/18/2013 24 hr
	382026.99	3864818.97	0.49508	835.78	835.78	3 1	5 24-HR	ALL	1ST		12/18/2013 24 hr
	381752.45	3865139.57					5 24-HR	ALL	1ST		12/18/2013 24 hr
	381777.41	3865139.45	0.49406	839.74	839.74	1	5 24-HR	ALL	1ST		12/18/2013 24 hr
	382309.26	3863342.01	0.49393	814.82	814.82	2 1	5 24-HR	ALL	1ST		12/23/2013 24 hr
	382015.24	3862866.25	0.49206	810.07	810.07	7 1	5 24-HR	ALL	1ST		12/23/2013 24 hr
	382026.99	3864794.42	0.49174	835.5	835.5	5 1	5 24-HR	ALL	1ST		12/18/2013 24 hr
	382624.66	3864321.03	0.49156	827.49	827.49) 1	5 24-HR	ALL	1ST		1/27/2009 24 hr
	382297.12	3863321.65	0.49025	814.55	814.55	5 1	5 24-HR	ALL	1ST		12/23/2013 24 hr
	382015.24	3863112.11	0.48907	813.16	813.16	5 1	5 24-HR	ALL	1ST		1/27/2009 24 hr
	382026.99	3864769.86	0.48842	835.24	835.24	1	5 24-HR	ALL	1ST		12/18/2013 24 hr
	382797.6	3863415.61	0.48768	814.66	814.66	5 1	5 24-HR	ALL	1ST		12/23/2013 24 hr
	382015.24	3862890.83	0.48741	810.35	810.35	5 1	5 24-HR	ALL	1ST		12/23/2013 24 hr
	382599.76	3864321.31	0.48636	827.52	827.52	2 1	5 24-HR	ALL	1ST		1/27/2009 24 hr
	382820.96	3863436.75	0.48586	814.74	814.74	1	5 24-HR	ALL	1ST		2/1/2013 24 hr
	382026.99	3864745.3	0.48435	834.89	834.89) 1	5 24-HR	ALL	1ST		12/18/2013 24 hr
	382015.24	3862915.42	0.48248	810.63	810.63	3 1	5 24-HR	ALL	1ST		12/23/2013 24 hr
	382574.85	3864321.6	0.48133	827.62	827.62	2 1	5 24-HR	ALL	1ST		1/27/2009 24 hr

						PM2.5 And	alysis				
			Concentration (AVERAGE CONC)	Elevation	Hill Heights	Flagpole	Averagin Period	Source Group			
Х	Υ	/	[ug/m^3]	(ZELEV)	(ZHILL)	(ZFLAG)	(AVE)	(GRP)	Rank	Net ID	Date (DATE(CON)
^	381727.49	3865139.7	0.48049	-	,		1.5 24-HR	ALL	1ST	Netib	12/18/2013 24 hr
	380283.96	3863546.94					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	382026.99	3864720.74	0.48007	834.5	834.	5	1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382015.24	3863087.53					1.5 24-HR	ALL	1ST		2/1/2013 24 hr
	379598.24	3863390.33					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	382015.24	3863062.94					1.5 24-HR	ALL	1ST		2/1/2013 24 hr
	382015.24 382549.95	3862940.01 3864321.88					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		12/23/2013 24 hr 1/27/2009 24 hr
	382026.99	3864696.18					1.5 24-HR	ALL	1ST		1/2//2009 24 III 12/18/2013 24 hr
	381227.44	3864871.44					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	382015.24	3863038.35					1.5 24-HR	ALL	1ST		2/1/2013 24 hr
	382076.8	3864327.25	0.47466	828.17	828.17	7	1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382101.7	3864326.96					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382051.89	3864327.53					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382126.6	3864326.68					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382151.5 382300.92	3864326.4 3864324.7					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 12/18/2013 24 hr
	382026.99	3864327.81					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382325.82	3864324.42					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382176.41	3864326.12					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382350.73	3864324.14	0.47367	827.89	827.89	9	1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382375.63	3864323.86					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382201.31	3864325.83					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382276.02	3864324.99					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382251.12 382226.21	3864325.27 3864325.55					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 12/18/2013 24 hr
	382400.53	3864323.57					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382450.34	3864323.01					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382425.44	3864323.29					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382475.24	3864322.73	0.47311	827.8	827.8	3	1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382500.14	3864322.44					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	381702.53	3865139.82					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382525.05	3864322.16					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382015.24 379091.84	3863013.77 3862415.67					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		2/1/2013 24 hr 1/5/2009 24 hr
	382015.24	3862964.59					1.5 24-HR	ALL	1ST		12/23/2013 24 hr
	380403.46	3863820.57					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	382026.99	3864671.62	0.47146	833.58	833.58	3	1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382015.24	3862989.18	0.46908	811.55	811.5	5	1.5 24-HR	ALL	1ST		2/1/2013 24 hr
	381174.57	3863936.78					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	382026.99	3864647.07					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	381677.57 382026.99	3865139.94 3864622.51					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 12/18/2013 24 hr
	382026.99	3864597.95					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	380775.95	3863940.58					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	379598.47	3863414.77	0.45871	837.38	837.38	3	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380800.86	3863940.34					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	380825.78	3863940.11					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	380850.69	3863939.87					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	380875.6 380751.04	3863939.63 3863940.82					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 12/18/2013 24 hr
	380900.52	3863939.39					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	379188.43	3862726.54					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380925.43	3863939.16	0.45539	830.92	830.92	2	1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382026.99	3864573.39					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	380950.35	3863938.92					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	380259.52	3863546.58					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380726.12 380975.26	3863941.06 3863938.68					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 12/18/2013 24 hr
	381149.66	3863937.02					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	381099.83	3863937.5					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382087.86	3863254.35					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	381050	3863937.97					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	381124.74	3863937.26					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	381074.92	3863937.73					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	381000.17	3863938.45					1.5 24-HR	ALL	1ST 1ST		12/18/2013 24 hr
	382026.99 381025.09	3864548.83 3863938.21					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 12/18/2013 24 hr
	382821.74	3863415.61					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	380701.21	3863941.29					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382026.99	3864524.28					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	381227.52	3864896.05					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379188.77	3862751.36					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	382026.99	3864499.72					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	381652.61	3865140.06	0.44517	840.39	840.39	7	1.5 24-HR	ALL	1ST		12/18/2013 24 hr

						PM2.5 And	alysis				
			Concentration (AVERAGE CONC)	Elevation	Hill Hoights	Elagnolo	Averagin Period	Source Group			
Χ	Υ		[ug/m^3]	(ZELEV)	Hill Heights (ZHILL)	Flagpole (ZFLAG)	Averagin Period (AVE)	(GRP)	Rank	Net ID	Date (DATE(CON)
^	382026.99	3864352.37	0.44442	•	•	•	1.5 24-HR	ALL	1ST	Netib	12/18/2013 24 hr
	382857.8	3863437.98					1.5 24-HR	ALL	1ST		2/1/2013 24 hr
	382026.99	3864475.16	0.44333	830.28	830.28		1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	380676.29	3863941.53					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	380403.22	3863845.29					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379163.49	3862726.48					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	382026.99 382026.99	3864450.6 3864376.93					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 12/18/2013 24 hr
	382026.99	3864426.04					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382026.99	3864401.48					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382087.86	3863183.48					1.5 24-HR	ALL	1ST		1/27/2009 24 hr
	379598.71	3863439.21	0.43778	837.9	837.9		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	380235.08	3863546.23					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380651.38	3863941.77					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	379189.11	3862776.19	0.4348				1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381627.66 379598.95	3865140.19 3863463.65					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 1/29/2009 24 hr
	379138.55	3862726.42					1.5 24 HR	ALL	1ST		1/5/2009 24 hr
	380626.47	3863942					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	381602.7	3865140.31	0.42237	840.49	840.49		1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	379189.45	3862801.01	0.42172	830.03	830.03		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380210.64	3863545.87					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380601.55	3863942.24					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	381227.6	3864920.66					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381577.74 379113.61	3865140.43 3862726.36					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 1/5/2009 24 hr
	379599.19	3863488.09					1.5 24 HR	ALL	1ST		1/29/2009 24 hr
	379189.79	3862825.83					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	382055.65	3862687.37					1.5 24-HR	ALL	1ST		12/23/2013 24 hr
	380402.97	3863870	0.40636	835.73	835.73		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380576.64	3863942.48					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	379088.67	3862726.31					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380186.21	3863545.52					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381552.78 379190.13	3865140.55 3862850.65					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 1/5/2009 24 hr
	378866.18	3862085.75					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380551.72	3863942.72					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	380161.77	3863545.16	0.39102	832.84	832.84		1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	380137.33	3863544.8	0.38826	833.19	833.19		1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	381527.82	3865140.67	0.38492				1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	380112.89	3863544.45					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	379063.73 381227.68	3862726.25 3864945.27					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 1/5/2009 24 hr
	380088.45	3863544.09					1.5 24 HR	ALL	1ST		12/18/2013 24 hr
	379190.47	3862875.48					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379599.42	3863512.53	0.37842	839.4	839.4		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	380526.81	3863942.95	0.37571	835.8	835.8		1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	380064.01	3863543.74					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	381502.86	3865140.8					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	380039.57 379038.79	3863543.38 3862726.19					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		12/18/2013 24 hr 1/5/2009 24 hr
	384824.77	3863470.59					1.5 24-HR	ALL	1ST		1/3/2009 24 III 12/23/2013 24 hr
	380402.73	3863894.71					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	380015.13	3863543.02					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	381990.5	3862461.47	0.36449	805.67	805.67		1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	379190.81	3862900.3					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381978.62	3862439.97					1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	379990.69	3863542.67	0.36197				1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	382002.39 381966.74	3862482.96 3862418.48					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		12/16/2013 24 hr 12/16/2013 24 hr
	381477.9	3865140.92					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	379966.25	3863542.31					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	380501.9	3863943.19	0.35798				1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	381954.86	3862396.98	0.35771				1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	382014.27	3862504.46					1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	379013.85	3862726.13	0.35449				1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381942.97 379941.81	3862375.49 3863541.05					1.5 24-HR 1 5 24-HR	ALL ALL	1ST 1ST		12/16/2013 24 hr
	379941.81	3863541.95 3861962.53					1.5 24-HR 1.5 24-HR	ALL	151 1ST		12/18/2013 24 hr 1/5/2009 24 hr
	382014.36	3862480.28					1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	381931.09	3862353.99					1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	379191.15	3862925.12					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381227.76	3864969.88					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	382014.44	3862456.09					1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	380402.48	3863919.43	0.34594	836.42	836.42		1.5 24-HR	ALL	1ST		1/29/2009 24 hr

			Concontration			PM2.5 Analysis	5				
			Concentration (AVERAGE CONC)	Elevation	Hill Heights	Flagpole	Averagin Period	Source Group			
Χ	Υ		[ug/m^3]	(ZELEV)	(ZHILL)	(ZFLAG)	(AVE)	(GRP)	Rank	Net ID	Date (DATE(CON)
,	381919.21	3862332.5	0.34563	· ·	•	•	5 24-HR	ALL	1ST		12/16/2013 24 hr
	379917.37	3863541.6	0.34542				5 24-HR	ALL	1ST		12/18/2013 24 hr
	381452.95	3865141.04					5 24-HR	ALL	1ST		12/18/2013 24 hr
	381907.32	3862311	0.34164				5 24-HR	ALL	1ST		12/16/2013 24 hr
	378988.91	3862726.07					5 24-HR	ALL	1ST		1/5/2009 24 hr
	382014.53	3862431.91	0.33877				5 24-HR	ALL	1ST		12/16/2013 24 hr
	380216.16	3862088.49					5 24-HR	ALL	1ST		1/5/2009 24 hr
	380476.98	3863943.43					5 24-HR	ALL	1ST		12/18/2013 24 hr
	381895.44	3862289.5					5 24-HR	ALL	1ST		12/16/2013 24 hr
	379892.93	3863541.24					5 24-HR	ALL	1ST		12/18/2013 24 hr
	379506.94	3861951.57	0.3357				5 24-HR	ALL	1ST		1/5/2009 24 hr
	382014.61	3862407.73					5 24-HR	ALL	1ST		12/16/2013 24 hr
	381883.56	3862268.01	0.33354				5 24-HR	ALL	1ST		12/16/2013 24 hr
	379191.49	3862949.94					5 24-HR	ALL	1ST		1/5/2009 24 hr
	379868.49	3863540.89					5 24-HR	ALL	1ST		12/18/2013 24 hr
	382014.7	3862383.55					5 24-HR	ALL	1ST		12/16/2013 24 hr
	380328.43	3862104.92					5 24-HR	ALL	1ST		1/5/2009 24 hr
	381871.67	3862246.51	0.32966				5 24-HR	ALL	1ST		12/16/2013 24 hr
	381227.84	3864994.49	0.32772				5 24-HR	ALL	1ST		1/29/2009 24 hr
	378963.97	3862726.01					5 24-HR	ALL	1ST		1/5/2009 24 hr
	381427.99	3865141.16	0.32616				5 24-HR	ALL	1ST		12/18/2013 24 hr
	381859.79	3862225.02					5 24-HR	ALL	1ST		12/16/2013 24 hr
	382014.78	3862359.37	0.32429				5 24-HR	ALL	1ST		12/16/2013 24 hr
	379844.05	3863540.53					5 24-HR	ALL	1ST		12/18/2013 24 hr
	381847.91	3862203.52					5 24-HR	ALL	1ST		12/16/2013 24 hr
	382014.87	3862335.18					5 24-HR	ALL	1ST		12/16/2013 24 hr
	381836.03	3862182.03	0.31885				5 24-HR	ALL	1ST		12/16/2013 24 hr
	379819.61	3863540.17	0.31776				5 24-HR	ALL	1ST		12/18/2013 24 hr
	382014.95	3862311	0.31702				5 24-HR	ALL	1ST		12/16/2013 24 hr
	378685.21	3862465.49					5 24-HR	ALL	1ST		1/5/2009 24 hr
	381824.14	3862160.53					5 24-HR	ALL	1ST		12/16/2013 24 hr
	382015.04	3862286.82					5 24-HR	ALL	1ST		12/16/2013 24 hr
	379191.83	3862974.77					5 24-HR	ALL	1ST		1/5/2009 24 hr
	379697.42	3863538.39					5 24-HR	ALL	1ST		1/29/2009 24 hr
	379672.98	3863538.04					5 24-HR	ALL	1ST		1/29/2009 24 hr
	379648.54	3863537.68					5 24-HR	ALL	1ST		1/29/2009 24 hr
	379795.18	3863539.82					5 24-HR	ALL	1ST		12/18/2013 24 hr
	378939.02	3862725.96					5 24-HR	ALL	1ST		1/5/2009 24 hr
	381227.92	3865019.1					5 24-HR	ALL	1ST		1/29/2009 24 hr
	379721.86	3863538.75					5 24-HR	ALL	1ST		1/29/2009 24 hr
	381812.26	3862139.04					5 24-HR	ALL	1ST		12/16/2013 24 hr
	380452.07	3863943.67					5 24-HR	ALL	1ST		12/18/2013 24 hr
	381403.03	3865141.28					5 24-HR	ALL	1ST		12/18/2013 24 hr
	379770.74	3863539.46					5 24-HR	ALL	1ST		12/18/2013 24 hr
	379624.1	3863537.33					5 24-HR	ALL	1ST		1/29/2009 24 hr
	381800.38	3862117.54					5 24-HR	ALL	1ST		12/16/2013 24 hr
	379599.66	3863536.97					5 24-HR	ALL	1ST		1/29/2009 24 hr
	382015.12	3862262.63					5 24-HR	ALL	1ST		12/16/2013 24 hr
	379746.3	3863539.11	0.30742				5 24-HR	ALL	1ST		1/29/2009 24 hr
	381788.49	3862096.04					5 24-HR	ALL	1ST		12/16/2013 24 hr
	382015.21	3862238.45					5 24-HR	ALL	1ST		12/16/2013 24 hr
	382015.3	3862214.27					5 24-HR	ALL	1ST		12/16/2013 24 hr
	381776.61	3862074.55					5 24-HR	ALL	1ST		12/16/2013 24 hr
	382015.38	3862190.09					5 24-HR	ALL	1ST		12/16/2013 24 hr
	378914.08	3862725.9					5 24-HR	ALL	1ST		1/5/2009 24 hr
	381764.73	3862053.05					5 24-HR	ALL	1ST		12/16/2013 24 hr
	379192.17	3862999.59					5 24-HR	ALL	1ST		1/5/2009 24 hr
	381228	3865043.7	0.29686				5 24-HR	ALL	1ST		1/29/2009 24 hr
	381752.84	3862031.56					5 24-HR	ALL	1ST		12/16/2013 24 hr
	382015.47	3862165.91					5 24-HR	ALL	1ST		12/16/2013 24 hr
	381740.96	3862010.06					5 24-HR	ALL	1ST		12/16/2013 24 hr
	382015.55	3862141.72					5 24-HR	ALL	1ST		12/16/2013 24 hr
	381378.07	3865141.41					5 24-HR	ALL	1ST		12/18/2013 24 hr
	381779.08	3861988.57					5 24-HR	ALL	1ST		12/16/2013 24 hr
	382015.64	3862117.54					5 24-HR	ALL	1ST		12/16/2013 24 hr
	380427.15	3863943.9					5 24-HR	ALL	1ST		1/29/2009 24 hr
	382015.72	3862093.36					5 24-HR	ALL	1ST		12/16/2013 24 hr
	380402.24	3863944.14					5 24-HR	ALL	1ST		1/29/2009 24 hr
	381717.2	3861967.07					5 24-HR	ALL	1ST		12/16/2013 24 hr
	378889.14	3862725.84					5 24-HR	ALL	1ST		1/5/2009 24 hr
	381705.31	3861945.58					5 24-HR	ALL	1ST		12/16/2013 24 hr
	382015.81	3862069.17					5 24-HR	ALL	1ST		12/16/2013 24 hr
	381718.27	3861924.08					5 24-HR	ALL	1ST		12/16/2013 24 hr
	381693.43	3861924.08					5 24-HR	ALL	1ST		12/16/2013 24 hr
	381743.11	3861924.08					5 24-HR	ALL	1ST		12/16/2013 24 hr
		- 55252 1.00	0.20212	555.47	555.55	4.,					,,

						PM2.5 Ana	lysis				
			Concentration (AVERAGE CONC)	Elevation	Hill Hoights	Elagnolo	Averagin Period	Source Group			
Х	Υ		[ug/m^3]	(ZELEV)	Hill Heights (ZHILL)	Flagpole (ZFLAG)	Averagin Period (AVE)	Source Group (GRP)	Rank	Net ID	Date (DATE(CON)
^	381767.94	3861924.08	- -	-	,	• •	1.5 24-HR	ALL	1ST	Netib	12/16/2013 24 hr
	381792.78	3861924.08					1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	381817.62	3861924.08					1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	381842.46	3861924.08					1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	382015.89	3862044.99	0.28065	801.44	995.55	5	1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	382015.98	3862020.81	0.28017	801.27	995.55	5	1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	381867.29	3861924.08					1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	381228.08	3865068.31					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	381892.13	3861924.08					1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	379192.51	3863024.41					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381916.97	3861924.08					1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	381941.81	3861924.08					1.5 24-HR 1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	382513.1 382016.06	3862764.68 3861996.63					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		12/23/2013 24 hr 12/16/2013 24 hr
	381966.64	3861924.08					1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	382016.15	3861972.45					1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	381353.11	3865141.53					1.5 24-HR	ALL	1ST		12/18/2013 24 hr
	378864.2	3862725.78					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	382016.23	3861948.26	0.27077			,)	1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	382016.32	3861924.08	0.27034	800.51	995.55	5	1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	381991.48	3861924.08	0.2676	800.44	995.55	5	1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	381228.16	3865092.92	0.26243	841.64	841.64	l .	1.5 24-HR	ALL	1ST		10/30/2013 24 hr
	379192.85	3863049.24					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	378839.26	3862725.72					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381328.15	3865141.65					1.5 24-HR	ALL	1ST		2/22/2013 24 hr
	381303.2	3865141.77					1.5 24-HR	ALL	1ST		2/22/2013 24 hr
	381228.24	3865117.53	0.2497				1.5 24-HR	ALL	1ST		10/30/2013 24 hr
	381963.18	3861691.43					1.5 24-HR	ALL	1ST		12/16/2013 24 hr 2/22/2013 24 hr
	381278.24 378814.32	3865141.9 3862725.66					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr
	379193.19	3863074.06					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381253.28	3865142.02					1.5 24-HR	ALL	1ST		12/5/2013 24 hr
	378789.38	3862725.6					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379193.53	3863098.88					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	378764.44	3862725.55	0.21829	833.09	833.09)	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	380744.65	3861973.48	0.21617	802.67	802.67	7	1.5 24-HR	ALL	1ST		12/20/2012 24 hr
	379268.71	3863181.06	0.21503	836.62	836.62	<u>)</u>	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381228.32	3865142.14					1.5 24-HR	ALL	1ST		12/5/2013 24 hr
	378739.5	3862725.49					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379193.87	3863123.7					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	381965.44	3860757.67					1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	378714.56 382065.31	3862725.43 3860828.55					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/5/2009 24 hr 12/16/2013 24 hr
	379194.2	3863148.53					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	382086.41	3861639.41					1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	381446.78	3860815.66					1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	378689.62	3862725.37				5	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379199.64	3863545.69	0.18238	844.95	844.95	5	1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379199.3	3863520.87	0.18207	844.34	844.34	ļ	1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379175.98	3863545.66					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	380971.93	3861688.7					1.5 24-HR	ALL	1ST		12/20/2012 24 hr
	379198.96	3863496.04					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379198.62	3863471.22					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379198.28 379197.94	3863446.4 3863421.58					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	379197.94	3863545.63					1.5 24-HR 1.5 24-HR	ALL	151 1ST		1/29/2009 24 hr
	379197.6	3863396.75					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378664.68	3862725.31					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379128.66	3863545.6			845.79)	1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379197.26	3863371.93			841.35	5	1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	382102.84	3861351.89	0.16846	796.71	995.55	5	1.5 24-HR	ALL	1ST		12/16/2013 24 hr
	379194.54	3863173.35	0.16843	837.34	837.34	1	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379196.92	3863347.11					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379105	3863545.57					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379196.58	3863322.29					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379081.34	3863545.53					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	380446.61 379196.24	3864399.96 3863297.46					1.5 24-HR 1 5 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr
	379196.24 379057.68	3863297.46 3863545.5					1.5 24-HR 1.5 24-HR	ALL	151 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	378639.74	3862725.25					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379034.02	3863545.47					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379195.9	3863272.64					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379010.36	3863545.44					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379195.56	3863247.82	0.15564	838.76	838.76	5	1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378986.7	3863545.41	0.15386	847.47	847.47	7	1.5 24-HR	ALL	1ST		1/29/2009 24 hr

PM2.5 Analysis				lysis							
			Concentration (AVERAGE CONC)	Elevation	Hill Heights	Flagpole	Averagin Period	Source Group			
Х	Υ		[ug/m^3]	(ZELEV)	(ZHILL)	(ZFLAG)	(AVE)	(GRP)	Rank	Net ID	Date (DATE(CON)
	379195.22	3863222.99	- -	-	, ,		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378963.04	3863545.38	0.15145	847.84	847.84	ļ.	1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378614.8	3862725.19	0.15095	835	835	;	1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379194.88	3863198.17					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	378939.38	3863545.35					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378915.72	3863545.32					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378892.06 378868.4	3863545.28 3863545.25					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	378589.86	3862725.14					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	378844.74	3863545.22					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378821.08	3863545.19	0.13824	849.75	849.75	;	1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378796.31	3863640.15	0.13758	852.03	852.03	}	1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378796.59	3863616.4					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378796.86	3863592.65					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378796.03 378797.14	3863663.9 3863568.91					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	379814.93	3864095.01					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378797.42	3863545.16					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378795.75	3863687.64					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379742.33	3864015.14	0.13383	846.24	846.24	ļ.	1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378795.47	3863711.39	0.13354	853.62	853.62	<u>.</u>	1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378564.92	3862725.08					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	378795.19	3863735.14					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378794.92	3863758.88					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379633.42 379640.68	3864109.53 3864007.88					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	378539.98	3862725.02					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	378794.64	3863782.63					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378515.04	3862724.96					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	378794.36	3863806.38	0.11099	855.61	. 855.61	_	1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379626.16	3864915.46					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379422.86	3863797.32					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379422.86	3864087.75					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379408.34 378490.1	3864160.35 3862724.9					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/5/2009 24 hr
	379408.34	3864044.18					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379437.38	3863869.93					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379408.34	3863993.36	0.10489	850.42	850.42	<u>)</u>	1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378794.08	3863830.12	0.10417	856.19	856.19)	1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378191.89	3863746.96					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378191.7	3863769.42					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378191.51 378169.62	3863791.89 3863746.95					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	378103.02	3863814.35					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378465.16	3862724.84					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	378147.35	3863746.95					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379248.6	3864138.57	0.09941	854.7	854.7	7	1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378191.13	3863836.82					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378125.08	3863746.94					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378102.81	3863746.93					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378793.8 378190.94	3863853.87 3863859.28					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	378080.55	3863746.93					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	382964.11	3861824					1.5 24-HR	ALL	1ST		2/11/2013 24 hr
	378058.28	3863746.92	0.09571				1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378190.75	3863881.75					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378036.01	3863746.91					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379125.17	3864203.92					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379146.96	3864124.05					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378013.74 378440.21	3863746.91 3862724.79					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/5/2009 24 hr
	377991.47	3863746.9					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	377991.63	3863722.95					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379219.56	3864276.52					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378793.52	3863877.62	0.09168			;	1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378190.56	3863904.21					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	377991.79	3863699					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	377991.94	3863675.05					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	377992.1 378190.37	3863651.1 3863926.68					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	378415.27	3862724.73					1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379226.82	3864603.25					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378793.25	3863901.37					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	377992.26	3863627.15					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379372.04	3864334.61	0.08413	857.61	857.61	_	1.5 24-HR	ALL	1ST		1/29/2009 24 hr

			Canadantian				PM2.5 And	alysis				
			Concentration (AVERAGE CONC)	Elevation	Hill Hei	ahts	Flagpole	Averagin Period	Source Group			
Х	Υ		[ug/m^3]	(ZELEV)	(ZHILL)	-	(ZFLAG)	(AVE)	(GRP)	Rank	Net ID	Date (DATE(CON)
~	377992.42	3863603.2		-	58.28	858.28	(2. 2. 10)	1.5 24-HR	ALL	1ST	110015	1/29/2009 24 hr
	378190.18	3863949.14			865	865		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379422.86	3864429			58.19	858.19		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378214.28	3863949.13	0.0833	8	64.94	864.94		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378238.38	3863949.12	0.08321		864.6	864.6		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378262.48	3863949.11	0.08309	8	64.27	864.27		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378334.78	3863949.07	0.0825	8	63.37	863.37		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378286.58	3863949.1	0.08245		864.3	864.3		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378390.33	3862724.67			36.42	836.42		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	379226.82	3864341.87	0.08243		59.23	859.23		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378310.68	3863949.08			63.93	863.93		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378358.88	3863949.06			63.13	863.13		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378792.97	3863925.11			58.41	858.41		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378382.98	3863949.05	0.08159		63.11	863.11		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	377992.57 378407.08	3863579.25 3863949.04	0.08159 0.08072		57.72 63.28	857.72 863.28		1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/29/2009 24 hr
	378503.49	3863948.99	0.08072		61.58	861.58		1.5 24-HR 1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378503.45	3863948.98			61.14	861.14		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378551.69	3863948.97			860.7	860.7		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378479.38	3863949.01			62.13	862.13		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378575.79	3863948.96			60.41	860.41		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378455.28	3863949.02	0.08		62.89	862.89		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378431.18	3863949.03	0.07991	8	63.42	863.42		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378599.89	3863948.95	0.07983	8	60.32	860.32		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378623.99	3863948.94	0.07942	8	60.25	860.25		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378648.09	3863948.93	0.07915	8	60.09	860.09		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378672.19	3863948.92	0.07901	8	59.86	859.86		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	377992.73	3863555.3	0.07899		57.14	857.14		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	379335.73	3864407.22			859.5	859.5		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378696.29	3863948.9			59.62	859.62		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378792.69	3863948.86			58.87	858.87		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378720.39	3863948.89			59.53 50.31	859.53		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378768.59 378744.49	3863948.87 3863948.88	0.07841 0.07841		59.31 59.51	859.31 859.51		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378744.49	3862724.61			36.39	836.39		1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 1/5/2009 24 hr
	377992.89	3863531.35			56.61	856.61		1.5 24-HR 1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378340.45	3862724.55			36.41	836.41		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	377993.05	3863507.4	0.07315		856.1	856.1		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	377993.2	3863483.45			55.57	855.57		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378315.51	3862724.49			36.53	836.53		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	377993.36	3863459.5	0.06676	8	54.98	854.98		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378290.57	3862724.43	0.06592	8	36.79	836.79		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	377993.52	3863435.55	0.06335	8	54.42	854.42		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378265.63	3862724.38	0.06246	8	37.13	837.13		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	377993.68	3863411.6			53.93	853.93		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378240.69	3862724.32			37.46	837.46		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	377993.83	3863387.65			53.45	853.45		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	378215.75	3862724.26			37.58	837.58		1.5 24-HR	ALL	1ST		1/5/2009 24 hr
	378190.81	3862724.2			837.8	837.8		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	378165.87	3862724.14			38.03 • • • •	838.03		1.5 24-HR	ALL	1ST 1ST		11/5/2010 24 hr
	378140.93 378115.99	3862724.08 3862724.02			838.3 38.74	838.3 838.74		1.5 24-HR 1.5 24-HR	ALL ALL	1ST		11/5/2010 24 hr 11/5/2010 24 hr
	378091.05	3862723.97			39.16	839.16		1.5 24-HR 1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	378051.05	3862723.91			39.46	839.46		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	378041.17	3862723.85			39.75	839.75		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	378016.23	3862723.79			840	840		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377993.99	3863363.7			52.95	852.95		1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	377991.29	3862723.73	0.05204	8	40.22	840.22		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377966.35	3862723.67	0.05182	8	40.34	840.34		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377941.4	3862723.61	0.05158	8	40.58	840.58		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377916.46	3862723.56	0.0513		841	841		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377891.52	3862723.5			41.22	841.22		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377866.58	3862723.44			41.42	841.42		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377357.48	3862548.41			41.27	841.27		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377841.64	3862723.38			41.65	841.65		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377816.7	3862723.32			41.84 42.10	841.84		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377791.76 377766.82	3862723.26 3862723.21			42.19 42.59	842.19 842.59		1.5 24-HR 1 5 24-HR	ALL ALL	1ST 1ST		11/5/2010 24 hr 11/5/2010 24 hr
	377766.82	3862723.21 3862723.15			42.59 42.92	842.59 842.92		1.5 24-HR 1.5 24-HR	ALL	151 1ST		11/5/2010 24 hr 11/5/2010 24 hr
	377716.94	3862723.13	0.04946		42.92 43.18	843.18		1.5 24-HR 1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377710.94	3862723.03			43.18 43.34	843.34		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377667.06	3862722.97			43.42	843.42		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377642.12	3862722.91			843.3	843.3		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377617.18	3862722.85			43.19	843.19		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377994.15	3863339.75	0.04819		52.47	852.47		1.5 24-HR	ALL	1ST		1/29/2009 24 hr

						PM2.5 Anal	lysis				
			Concentration (AVERAGE CONC)	Elevation	Hill Heights	Flagpole	Averagin Period	Source Group			
Χ	Υ		[ug/m^3]	(ZELEV)	(ZHILL)	(ZFLAG)	(AVE)	(GRP)	Rank	Net ID	Date (DATE(CON)
	377592.24	3862722.8	0.04794	· ·	843.27		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377567.3	3862722.74	0.04767	843.4	843.4		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377542.36	3862722.68	0.04741	843.36	843.36		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377517.42	3862722.62					1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377492.48	3862722.56					1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377467.54	3862722.5					1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377969.8 377442.59	3863339.73 3862722.44	0.04643 0.04624				1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		1/29/2009 24 hr 11/5/2010 24 hr
	377442.39	3862722.39	0.04624				1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377028.24	3862612.69	0.04578				1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377392.71	3862722.33					1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377367.77	3862722.27	0.04533	844.62	844.62		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377342.83	3862722.21	0.04502	844.75	844.75		1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377317.89	3862722.15					1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377945.44	3863339.72					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	377292.95 377268.01	3862722.09	0.04439 0.04408				1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377243.07	3862722.04 3862721.98					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		11/5/2010 24 hr 11/5/2010 24 hr
	377218.13	3862721.92					1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377192.53	3862870.02					1.5 24-HR	ALL	1ST		1/27/2011 24 hr
	377192.64	3862845.33	0.04321	848.05	848.05	1	1.5 24-HR	ALL	1ST		1/27/2011 24 hr
	377192.42	3862894.72	0.0432	849.11	849.11		1.5 24-HR	ALL	1ST		1/27/2011 24 hr
	377193.19	3862721.86					1.5 24-HR	ALL	1ST		11/5/2010 24 hr
	377921.09	3863339.7					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	377192.75	3862820.64	0.04307				1.5 24-HR	ALL	1ST		1/27/2011 24 hr
	377192.31 377192.86	3862919.41 3862795.94	0.04303 0.04282				1.5 24-HR	ALL	1ST 1ST		1/27/2011 24 hr 1/27/2011 24 hr
	377192.80	3862944.11	0.04282				1.5 24-HR 1.5 24-HR	ALL ALL	1ST		1/27/2011 24 hr
	377192.97	3862771.25					1.5 24-HR	ALL	1ST		8/22/2011 24 hr
	377192.09	3862968.8					1.5 24-HR	ALL	1ST		1/27/2011 24 hr
	377193.08	3862746.55	0.0423				1.5 24-HR	ALL	1ST		8/22/2011 24 hr
	377191.98	3862993.49	0.04181	851.15	851.15	1	1.5 24-HR	ALL	1ST		1/27/2011 24 hr
	377896.73	3863339.68					1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	377191.87	3863018.19	0.04116				1.5 24-HR	ALL	1ST		1/27/2011 24 hr
	377191.76 377191.65	3863042.88 3863067.58					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		11/29/2010 24 hr 11/29/2010 24 hr
	377191.53	3863092.27					1.5 24-HR	ALL	1ST		11/29/2010 24 hr
	377872.38	3863339.67	0.04008				1.5 24-HR	ALL	1ST		1/29/2009 24 hr
	377191.43	3863116.96					1.5 24-HR	ALL	1ST		11/29/2010 24 hr
	377191.32	3863141.66	0.03947	854.59	854.59	1	1.5 24-HR	ALL	1ST		11/29/2010 24 hr
	377848.02	3863339.65	0.03911	853.97	853.97		1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377823.67	3863339.64					1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377191.21	3863166.35					1.5 24-HR	ALL	1ST		11/29/2010 24 hr
	377799.31 377774.96	3863339.62 3863339.6					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		4/3/2013 24 hr 4/3/2013 24 hr
	377750.6	3863339.59					1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377726.25	3863339.57					1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377701.89	3863339.55					1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377191.1	3863191.05	0.03818	855.94	855.94		1.5 24-HR	ALL	1ST		11/29/2010 24 hr
	377677.54	3863339.54					1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377653.18	3863339.52					1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377628.83	3863339.5					1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377604.47 377190.99	3863339.49 3863215.74	0.0377 0.03762				1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		4/3/2013 24 hr 1/3/2013 24 hr
	377580.12	3863339.47	0.03756				1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377555.76	3863339.46					1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377531.41	3863339.44					1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377507.05	3863339.42	0.03715	857.07	857.07		1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377190.88	3863240.43	0.03705	857.34	857.34		1.5 24-HR	ALL	1ST		1/3/2013 24 hr
	377482.7	3863339.41					1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377458.34	3863339.39					1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377433.99	3863339.37					1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377409.63 377385.28	3863339.36 3863339.34					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		4/3/2013 24 hr 4/3/2013 24 hr
	377383.28	3863265.13	0.03641				1.5 24-HR	ALL	1ST		1/3/2013 24 hr
	377360.92	3863339.32					1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377336.57	3863339.31					1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377190.66	3863289.82					1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377312.21	3863339.29	0.03604				1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377287.86	3863339.28					1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377263.5	3863339.26					1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377190.55 377239.15	3863314.52 3863339.24					1.5 24-HR 1.5 24-HR	ALL ALL	1ST 1ST		4/3/2013 24 hr 4/3/2013 24 hr
	377239.15	3863339.23					1.5 24-HR	ALL	1ST		4/3/2013 24 hr
	377190.44	3863339.21	0.03534				1.5 24-HR	ALL	1ST		4/3/2013 24 hr
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** AERMOD Input Produced by:
** AERMOD View Ver. 11.0.1
** Lakes Environmental Software Inc.
** Date: 3/22/2023
** File: C:\Lakes\AERMOD View\BullheadSolar_AERMOD\Bullhead Solar HRA\Bullhead
Solar HRA.ADI
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** AERMOD Control Pathway
************
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  MODELOPT DFAULT CONC
  AVERTIME PERIOD
  POLLUTID PM 10
  FLAGPOLE 1.50
  RUNORNOT RUN
  ERRORFIL "Bullhead Solar HRA.err"
CO FINISHED
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** AERMOD Source Pathway
************
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** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
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                   AREAPOLY
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                                                      839.530
** DESCRSRC Construction Area Exhaust
  LOCATION CSTN_DST
                    AREAPOLY
                              382026.985 3865138.229
                                                      839.530
** DESCRSRC Construction Area Dust
** ______
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = ONRD EX
** DESCRSRC Onroad Exhaust
** PREFIX
** Length of Side = 14.00
** Configuration = Adjacent
** Emission Rate = 1.0
** Vertical Dimension = 6.80
** SZINIT = 3.16
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                         VOLUME
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LOCATION	L0000073	VOLUME	380203.886	3863547.070	832.20
LOCATION	L0000074	VOLUME	380217.885	3863546.917	832.14
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LOCATION		VOLUME		3863545.691	
LOCATION		VOLUME		3863545.538	
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	L0000086	VOLUME	380385.875	3863545.078	
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	L0000126	VOLUME		3863538.947	
	L0000127	VOLUME		3863538.794	
	L0000128	VOLUME		3863538.640	
	L0000129	VOLUME		3863538.487	
	L0000130	VOLUME		3863538.334	
	L0000131	VOLUME		3863538.180	
	L0000132	VOLUME		3863538.027	
	L0000133	VOLUME		3863537.874	
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	L0000134	VOLUME		3863537.721	
	L0000135	VOLUME		3863537.567	
	L0000136	VOLUME		3863537.414	
	L0000137	VOLUME		3863537.261	
	L0000138	VOLUME	381113.832	3863537.108	823.13
	L0000139	VOLUME	381127.831	3863536.954	
	L0000140	VOLUME	381141.830	3863536.801	
	L0000141	VOLUME	381155.829	3863536.648	
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	L0000151	VOLUME	381295.816	3863534.724	
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	L0000154	VOLUME		3863534.091	821.05
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LOCATION	L0000158	VOLUME	381393.805	3863533.247	820.61
LOCATION	L0000159	VOLUME	381407.803	3863533.036	820.46
LOCATION	L0000160	VOLUME	381421.801	3863532.825	820.27
LOCATION	L0000161	VOLUME	381435.800	3863532.614	820.16
LOCATION	L0000162	VOLUME	381449.798	3863532.403	820.09
LOCATION	L0000163	VOLUME	381463.797	3863532.192	819.94
LOCATION	L0000164	VOLUME	381477.795	3863531.981	819.84
LOCATION	L0000165	VOLUME	381491.793	3863531.770	819.76
LOCATION	L0000166	VOLUME	381505.792	3863531.559	819.69
LOCATION	L0000167	VOLUME	381519.790	3863531.348	819.59
LOCATION	L0000168	VOLUME	381533.789	3863531.137	819.51
LOCATION	L0000169	VOLUME	381547.787	3863530.926	819.44
LOCATION	L0000170	VOLUME	381561.785	3863530.715	819.39
LOCATION	L0000171	VOLUME	381575.784	3863530.504	819.33
LOCATION	L0000172	VOLUME	381589.782	3863530.293	819.28
LOCATION	L0000173	VOLUME	381603.781	3863530.082	819.23
LOCATION	L0000174	VOLUME	381617.779	3863529.871	819.17
LOCATION	L0000175	VOLUME	381631.777	3863529.660	819.08
LOCATION	L0000176	VOLUME	381645.776	3863529.449	819.01
LOCATION	L0000177	VOLUME	381659.774	3863529.238	818.93
LOCATION	L0000178	VOLUME	381673.773	3863529.027	818.86
LOCATION	L0000179	VOLUME	381687.771	3863528.816	818.82
LOCATION	L0000180	VOLUME	381701.770	3863528.605	818.79
LOCATION	L0000181	VOLUME	381715.768	3863528.394	818.74
LOCATION	L0000182	VOLUME		3863528.182	
LOCATION	L0000183	VOLUME		3863527.971	

LOCATION	1.0000104	\/OLLIME	204757 762	2062527 760	040 65
	L0000184	VOLUME		3863527.760	
	L0000185	VOLUME		3863527.549	
	L0000186	VOLUME			818.51
LOCATION	L0000187	VOLUME		3863527.127	818.42
LOCATION	L0000188	VOLUME	381813.757	3863526.916	818.34
LOCATION	L0000189	VOLUME	381827.755	3863526.705	818.26
LOCATION	L0000190	VOLUME		3863526.494	818.22
LOCATION	L0000191	VOLUME	381855.752	3863526.283	818.17
LOCATION	L0000192	VOLUME	381869.750	3863526.072	818.16
LOCATION	L0000193	VOLUME	381883.749	3863525.861	818.13
LOCATION	L0000194	VOLUME	381897.747	3863525.650	818.09
LOCATION	L0000195	VOLUME	381911.746	3863525.439	818.03
LOCATION	L0000196	VOLUME	381925.744	3863525.228	817.98
LOCATION	L0000197	VOLUME	381939.742	3863525.017	817.86
LOCATION	L0000198	VOLUME	381953.741	3863524.806	817.62
LOCATION	L0000199	VOLUME			817.33
LOCATION	L0000200	VOLUME		3863524.384	817.27
	L0000201	VOLUME	381995.736		817.13
LOCATION	L0000202	VOLUME	382009.735	3863523.962	817.02
LOCATION	L0000203	VOLUME	382023.733	3863523.751	817.09
LOCATION	L0000204	VOLUME		3863523.540	817.32
LOCATION	L0000205	VOLUME		3863512.426	817.19
	L0000206	VOLUME		3863498.427	817.10
	L0000207	VOLUME			816.91
	L0000207	VOLUME		3863470.430	816.71
	L0000209	VOLUME		3863456.431	816.53
	L0000203	VOLUME		3863442.432	816.38
	L0000210 L0000211	VOLUME		3863428.433	816.24
	L0000211 L0000212	VOLUME	382039.487		
				3863414.434	
	L0000213	VOLUME		3863400.435	
	L0000214	VOLUME		3863386.436	
	L0000215	VOLUME	382038.796	3863372.437	
LOCATION	L0000216	VOLUME	382038.623	3863358.438	815.69
	L0000217	VOLUME		3863344.439	
	L0000218	VOLUME		3863330.440	
	L0000219	VOLUME		3863316.441	
	L0000220	VOLUME		3863302.442	
	L0000221	VOLUME		3863288.443	
	L0000222	VOLUME		3863274.444	
	L0000223	VOLUME		3863260.446	
	L0000224	VOLUME		3863246.447	
LOCATION	L0000225	VOLUME	382037.068	3863232.448	814.33
LOCATION	L0000226	VOLUME	382036.895	3863218.449	814.12
	L0000227	VOLUME		3863204.450	
LOCATION	L0000228	VOLUME	382036.549	3863190.451	813.84
LOCATION	L0000229	VOLUME	382036.376	3863176.452	813.72
LOCATION	L0000230	VOLUME	382036.204	3863162.453	813.60
LOCATION	L0000231	VOLUME	382036.031	3863148.454	813.47
LOCATION	L0000232	VOLUME	382035.858	3863134.455	813.31
LOCATION	L0000233	VOLUME	382035.685	3863120.456	813.16

LOCATION			202025 542	2062406 457	04.2 04
	L0000234	VOLUME		3863106.457	
	L0000235	VOLUME			812.81
	L0000236	VOLUME	382035.167	3863078.459	812.57
LOCATION	L0000237	VOLUME	382034.994	3863064.460	812.33
LOCATION	L0000238	VOLUME	382034.821	3863050.462	812.10
LOCATION	L0000239	VOLUME	382034.648	3863036.463	811.89
LOCATION	L0000240	VOLUME	382034.475	3863022.464	811.72
LOCATION	L0000241	VOLUME	382034.302	3863008.465	811.56
LOCATION	L0000242	VOLUME	382034.130	3862994.466	811.40
LOCATION	L0000243	VOLUME	382033.957	3862980.467	811.23
LOCATION	L0000244	VOLUME	382033.784	3862966.468	811.08
LOCATION	L0000245	VOLUME	382033.611	3862952.469	810.91
LOCATION	L0000246	VOLUME	382033.438	3862938.470	810.71
LOCATION	L0000247	VOLUME	382033.266	3862924.471	810.53
LOCATION	L0000248	VOLUME	382033.093	3862910.472	810.37
LOCATION	L0000249	VOLUME	382032.920	3862896.473	810.20
LOCATION	L0000250	VOLUME	382032.747	3862882.474	810.07
LOCATION	L0000251	VOLUME	382032.574	3862868.475	809.96
LOCATION	L0000252	VOLUME	382032.401	3862854.476	809.84
LOCATION	L0000253	VOLUME	382032.229	3862840.478	809.70
LOCATION	L0000254	VOLUME	382032.056	3862826.479	809.57
LOCATION	L0000255	VOLUME	382031.883	3862812.480	809.45
	L0000256	VOLUME	382031.710	3862798.481	809.34
	L0000257	VOLUME		3862784.482	809.22
	L0000258	VOLUME		3862770.483	809.11
	L0000259	VOLUME		3862756.484	809.00
	L0000260	VOLUME	382031.019	3862742.485	808.88
	L0000261	VOLUME	382030.846	3862728.486	808.72
	L0000262	VOLUME	382030.673	3862714.487	808.56
	L0000263	VOLUME	382030.500	3862700.488	808.42
	L0000264	VOLUME	382030.327	3862686.489	808.26
	L0000265	VOLUME	382030.155	3862672.490	808.10
LOCATION	L0000266	VOLUME	382029.982	3862658.491	807.95
	L0000267	VOLUME		3862644.492	
	L0000268	VOLUME		3862630.494	
	L0000269	VOLUME		3862616.495	
	L0000270	VOLUME		3862602.496	
	L0000270	VOLUME		3862588.497	
	L0000271	VOLUME		3862574.498	
	L0000272 L0000273	VOLUME		3862560.499	
	L0000273	VOLUME		3862546.500	
	L0000274	VOLUME		3862532.501	
	L0000273	VOLUME		3862518.502	
	L0000270	VOLUME		3862504.503	
	L0000277 L0000278			3862490.504	
	L0000278 L0000279	VOLUME		3862476.504	
	L0000279 L0000280	VOLUME		3862462.504	
		VOLUME			
	L0000281	VOLUME		3862448.504	
	L0000282	VOLUME		3862434.504	
LUCATION	L0000283	VOLUME	382028.356	3862420.504	805.40

LOCATION			202020 440	2062406 505	005 05
	L0000284	VOLUME		3862406.505	
	L0000285	VOLUME		3862392.505	805.10
	L0000286	VOLUME	382028.545	3862378.505	804.97
LOCATION	L0000287	VOLUME	382028.608	3862364.505	804.82
LOCATION	L0000288	VOLUME	382028.671	3862350.505	804.67
LOCATION	L0000289	VOLUME	382028.734	3862336.505	804.52
LOCATION	L0000290	VOLUME	382028.797	3862322.505	804.38
LOCATION	L0000291	VOLUME	382028.860	3862308.506	804.27
LOCATION	L0000292	VOLUME	382028.924	3862294.506	804.14
LOCATION	L0000293	VOLUME	382028.987	3862280.506	804.01
LOCATION	L0000294	VOLUME	382029.050	3862266.506	803.89
LOCATION	L0000295	VOLUME	382029.113	3862252.506	803.76
LOCATION	L0000296	VOLUME	382029.176	3862238.506	803.62
LOCATION	L0000297	VOLUME	382029.239	3862224.506	803.46
LOCATION	L0000298	VOLUME	382029.302	3862210.507	803.29
LOCATION	L0000299	VOLUME	382029.365	3862196.507	803.12
LOCATION	L0000300	VOLUME	382029.428	3862182.507	802.96
LOCATION	L0000301	VOLUME	382029.491	3862168.507	802.81
LOCATION	L0000302	VOLUME	382029.554	3862154.507	802.66
LOCATION	L0000303	VOLUME	382029.617	3862140.507	802.51
LOCATION	L0000304	VOLUME	382029.680	3862126.507	802.36
LOCATION	L0000305	VOLUME	382029.743	3862112.508	802.22
LOCATION	L0000306	VOLUME	382029.806	3862098.508	802.09
	L0000307	VOLUME	382029.869	3862084.508	801.96
	L0000308	VOLUME	382029.933	3862070.508	801.85
LOCATION	L0000309	VOLUME	382029.996	3862056.508	801.72
LOCATION	L0000310	VOLUME	382030.059	3862042.508	801.61
LOCATION	L0000311	VOLUME	382030.122	3862028.508	801.50
LOCATION	L0000312	VOLUME	382030.185	3862014.509	801.39
	L0000313	VOLUME	382030.248	3862000.509	801.26
	L0000314	VOLUME	382030.311	3861986.509	801.15
LOCATION	L0000315	VOLUME	382030.374	3861972.509	801.02
LOCATION	L0000316	VOLUME	382030.437	3861958.509	800.89
	L0000317	VOLUME		3861944.509	800.78
	L0000317	VOLUME		3861930.509	
	L0000319	VOLUME		3861916.510	
	L0000320	VOLUME		3861902.510	
	L0000321	VOLUME		3861888.510	
	L0000321	VOLUME		3861874.510	
	L0000322	VOLUME	382030.878		799.93
	L0000323	VOLUME	382030.942	3861846.510	799.81
	L0000325	VOLUME	382030.342	3861832.510	799.67
	L0000323	VOLUME		3861818.511	799.52
	L0000327	VOLUME		3861804.511	799.37
	L0000327 L0000328	VOLUME		3861790.511	799.37
	L0000328 L0000329				799.24
	L0000329 L0000330	VOLUME			798.10
	L0000330	VOLUME		3861762.511	
		VOLUME			
	L0000332	VOLUME		3861734.511	
LUCATION	L0000333	VOLUME	382831.589	3861720.511	/98.59

LOCATION	1.000033.4	\/OLLIME	202024 572	2064706 542	700 45
	L0000334	VOLUME		3861706.512	
	L0000335	VOLUME			798.30
	L0000336	VOLUME	382031.698		798.16
LOCATION	L0000337	VOLUME	382031.761	3861664.512	798.03
LOCATION	L0000338	VOLUME	382031.824	3861650.512	797.87
LOCATION	L0000339	VOLUME	382031.887	3861636.512	797.75
LOCATION	L0000340	VOLUME	382031.951	3861622.512	797.63
LOCATION	L0000341	VOLUME	382032.014	3861608.513	797.54
LOCATION	L0000342	VOLUME	382032.077	3861594.513	797.45
LOCATION	L0000343	VOLUME	382032.140	3861580.513	797.29
LOCATION	L0000344	VOLUME	382032.203	3861566.513	797.16
LOCATION	L0000345	VOLUME	382031.809	3861552.522	797.04
LOCATION	L0000346	VOLUME	382031.187	3861538.536	796.94
LOCATION	L0000347	VOLUME	382030.566	3861524.550	796.84
LOCATION	L0000348	VOLUME	382029.944	3861510.564	796.75
LOCATION	L0000349	VOLUME	382029.322	3861496.578	796.65
LOCATION	L0000350	VOLUME	382028.701	3861482.591	796.54
LOCATION	L0000351	VOLUME	382028.079	3861468.605	796.42
LOCATION	L0000352	VOLUME	382027.457	3861454.619	796.27
LOCATION	L0000353	VOLUME	382026.836	3861440.633	796.13
LOCATION	L0000354	VOLUME	382026.214	3861426.647	796.01
LOCATION	L0000355	VOLUME	382025.593	3861412.660	795.83
LOCATION	L0000356	VOLUME	382024.971	3861398.674	795.65
	L0000357	VOLUME	382024.349	3861384.688	795.46
	L0000357	VOLUME		3861370.702	795.24
	L0000350	VOLUME	382023.726	3861356.716	795.11
LOCATION	L0000359	VOLUME	382022.485	3861342.729	795.02
	L0000360 L0000361	VOLUME	382021.863	3861328.743	
LOCATION	L0000361 L0000362	VOLUME		3861314.757	794.96 795.02
		VOLUME	382021.241		
	L0000363			3861300.771	795.22
	L0000364	VOLUME	382019.998	3861286.785	795.54
LOCATION	L0000365	VOLUME	382019.377	3861272.798	795.92
LOCATION	L0000366	VOLUME	382018.755	3861258.812	796.31
	L0000367	VOLUME			796.67
	L0000368	VOLUME		3861230.840	
	L0000369	VOLUME		3861216.854	
	L0000370	VOLUME		3861202.867	
	L0000371	VOLUME		3861188.881	
	L0000372	VOLUME		3861175.308	
	L0000373	VOLUME		3861162.114	
	L0000374	VOLUME	382003.545	3861148.920	797.83
LOCATION	L0000375	VOLUME	381998.863	3861135.726	797.82
LOCATION	L0000376	VOLUME	381994.181	3861122.532	797.75
LOCATION	L0000377	VOLUME	381989.500	3861109.338	797.64
LOCATION	L0000378	VOLUME	381984.818	3861096.144	797.53
LOCATION	L0000379	VOLUME	381980.136	3861082.950	797.46
LOCATION	L0000380	VOLUME	381975.454	3861069.756	797.32
LOCATION	L0000381	VOLUME	381970.773	3861056.562	797.11
LOCATION	L0000382	VOLUME	381966.091	3861043.368	796.72
LOCATION	L0000383	VOLUME	381961.409	3861030.174	796.50

LOCATION		\/OLLIME	204056 727	2064046 000	706 27
LOCATION I		VOLUME		3861016.980	
	L0000385	VOLUME		3861003.786	796.14
	L0000386	VOLUME		3860990.592	795.93
	L0000387	VOLUME	381942.682	3860977.398	795.91
	L0000388	VOLUME	381938.000	3860964.204	795.78
	L0000389	VOLUME	381933.319	3860951.010	795.65
	L0000390	VOLUME	381928.637	3860937.816	795.56
	L0000391	VOLUME	381923.955	3860924.622	795.60
LOCATION I	L0000392	VOLUME	381919.273	3860911.428	795.65
LOCATION I	L0000393	VOLUME	381914.592	3860898.234	795.67
	L0000394	VOLUME	381909.910	3860885.040	795.72
LOCATION I	L0000395	VOLUME	381905.228	3860871.846	795.69
LOCATION I	L0000396	VOLUME	381900.546	3860858.652	795.60
LOCATION I	L0000397	VOLUME	381895.865	3860845.458	795.34
LOCATION I	L0000398	VOLUME	381891.183	3860832.264	794.97
LOCATION I	L0000399	VOLUME	381886.501	3860819.071	794.53
LOCATION I	L0000400	VOLUME	381881.820	3860805.877	794.13
LOCATION I	L0000401	VOLUME	381877.138	3860792.683	793.75
LOCATION I	L0000402	VOLUME	381871.946	3860779.684	793.33
LOCATION I	L0000403	VOLUME	381866.616	3860766.738	792.98
LOCATION I	L0000404	VOLUME	381861.285	3860753.793	792.58
LOCATION I	L0000405	VOLUME	381855.955	3860740.847	792.39
LOCATION I	L0000406	VOLUME	381850.624	3860727.902	792.15
LOCATION I	L0000407	VOLUME	381845.294	3860714.956	791.89
LOCATION I	L0000408	VOLUME	381839.963	3860702.011	791.67
	L0000409	VOLUME	381834.633	3860689.065	791.36
	L0000410	VOLUME	381829.302	3860676.120	791.05
	L0000411	VOLUME	381823.972	3860663.174	790.60
	L0000412	VOLUME	381818.641	3860650.229	790.24
	L0000413	VOLUME	381813.311	3860637.283	789.95
	L0000414	VOLUME	381807.980	3860624.338	789.63
	L0000415	VOLUME	381802.650	3860611.392	789.37
	L0000416	VOLUME	381797.319	3860598.447	788.82
LOCATION I		VOLUME	381791.989	3860585.501	788.33
LOCATION		VOLUME		3860572.397	
LOCATION		VOLUME		3860558.497	
LOCATION		VOLUME		3860544.596	
LOCATION		VOLUME			786.41
LOCATION		VOLUME			785.95
LOCATION		VOLUME			785.46
LOCATION		VOLUME		3860488.995	784.90
LOCATION		VOLUME		3860475.095	784.39
LOCATION		VOLUME		3860461.411	783.78
LOCATION		VOLUME		3860447.883	783.70
LOCATION		VOLUME		3860434.356	782.32
LOCATION		VOLUME		3860420.829	781.48
LOCATION		VOLUME			780.77
LOCATION		VOLUME		3860393.774	
LOCATION		VOLUME		3860380.247	
LOCATION		VOLUME		3860366.720	
LOCATION	L0000433	VOLUME	201007.737	7000000.720	110.33

LOCATION	1 0000 43 4	\ (O.	204005 020	2060252 402	
	L0000434	VOLUME		3860353.192	
	L0000435	VOLUME			776.94
	L0000436	VOLUME	381817.823	3860328.228	776.28
LOCATION	L0000437	VOLUME	381825.327	3860316.409	775.61
LOCATION	L0000438	VOLUME	381832.831	3860304.591	775.07
LOCATION	L0000439	VOLUME	381840.335	3860292.772	774.56
LOCATION	L0000440	VOLUME	381847.839	3860280.953	774.08
LOCATION	L0000441	VOLUME	381855.343	3860269.134	773.60
LOCATION	L0000442	VOLUME	381862.847	3860257.315	773.09
LOCATION	L0000443	VOLUME	381870.352	3860245.496	772.56
LOCATION	L0000444	VOLUME	381877.856	3860233.677	772.00
LOCATION	L0000445	VOLUME	381885.360	3860221.858	771.47
LOCATION	L0000446	VOLUME	381892.864	3860210.039	770.96
LOCATION	L0000447	VOLUME	381900.368	3860198.220	770.43
LOCATION	L0000448	VOLUME	381907.872	3860186.401	769.88
LOCATION	L0000449	VOLUME	381915.376	3860174.582	769.36
LOCATION	L0000450	VOLUME	381922.880	3860162.763	768.85
LOCATION	L0000451	VOLUME	381930.384	3860150.944	768.37
LOCATION	L0000452	VOLUME	381937.889	3860139.125	767.91
LOCATION	L0000453	VOLUME	381945.393	3860127.306	767.48
LOCATION	L0000454	VOLUME	381952.897	3860115.487	767.03
LOCATION	L0000455	VOLUME	381960.401	3860103.668	766.57
LOCATION	L0000456	VOLUME	381967.905	3860091.849	766.10
LOCATION	L0000457	VOLUME	381975.409	3860080.030	765.67
	L0000458	VOLUME	381979.406	3860066.804	765.23
LOCATION	L0000459	VOLUME	381982.152	3860053.076	764.85
LOCATION	L0000455	VOLUME	381984.897	3860039.348	764.48
LOCATION	L0000461	VOLUME	381987.643	3860025.619	764.20
LOCATION	L0000461	VOLUME	381990.388	3860011.891	763.92
LOCATION	L0000462 L0000463	VOLUME	381993.134	3859998.163	763.70
LOCATION	L0000463	VOLUME	381995.880	3859984.435	763.59
LOCATION			381998.625	3859970.707	763.55
LOCATION	L0000465 L0000466	VOLUME	382001.371	3859956.979	763.49
	L0000466	VOLUME	382001.371	3859943.251	763.49
	L0000467 L0000468	VOLUME			
		VOLUME		3859929.522	
	L0000469	VOLUME		3859915.558	
	L0000470	VOLUME		3859901.589	
	L0000471	VOLUME			763.40
	L0000472	VOLUME			763.25
	L0000473	VOLUME		3859859.668	763.06
	L0000474	VOLUME		3859845.668	762.94
	L0000475	VOLUME	382002.452	3859831.669	762.82
	L0000476	VOLUME	382002.353	3859817.669	762.68
	L0000477	VOLUME		3859803.669	762.52
	L0000478	VOLUME			762.38
	L0000479	VOLUME			762.25
	L0000480	VOLUME		3859761.670	
	L0000481	VOLUME		3859747.671	
	L0000482	VOLUME		3859733.671	
LOCATION	L0000483	VOLUME	382001.663	3859719.672	761.55

LOCATION	1 0000 40 4	VOLUME	202004 565	2050705 672	764 30
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LOCATION		VOLUME		3859215.684	
LOCATION		VOLUME		3859201.684	
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LOCATION		VOLUME		3859131.686	756.13
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LOCATION	L0000533	VOLUME	381996./34	3859019.689	/55.66

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** DESCRSRC Onroad Dust
** PREFIX
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** Configuration = Adjacent
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	L0003657	VOLUME		3863543.698	
	L0003658	VOLUME		3863543.545	
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	L0003683	VOLUME	380875.846	3863539.713	824.71
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	L0003698	VOLUME		3863537.414	
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	L0003701	VOLUME		3863536.954	
	L0003702	VOLUME		3863536.801	
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	L0003707	VOLUME		3863535.991	
	L0003708	VOLUME		3863535.780	
LOCATION	L0003709	VOLUME	381239.822	3863535.569	822.41

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	L0003732	VOLUME	381561.785		819.39
	L0003732	VOLUME		3863530.504	
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	L0003738	VOLUME		3863529.238	818.93
	L0003739	VOLUME		3863529.027	818.86
	L0003740 L0003741			3863528.816	818.82
LOCATION	L0003741 L0003742	VOLUME VOLUME		3863528.605	818.79
	L0003742 L0003743	VOLUME	381701.770	3863528.394	
	L0003743 L0003744				
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	L0003745	VOLUME		3863527.971	
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	L0003747	VOLUME		3863527.549	
	L0003748	VOLUME		3863527.338	
	L0003749	VOLUME		3863527.127	
	L0003750	VOLUME		3863526.916	
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	L0003755	VOLUME		3863525.861	
	L0003756	VOLUME		3863525.650	
	L0003757	VOLUME		3863525.439	
LOCATION	L0003758	VOLUME	381925.744	3863525.228	817.98
LOCATION	L0003759	VOLUME	381939.742	3863525.017	817.86

LOCATION	10002760	VOLUME	201052 741	2062524 006	047 60
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	L0003761	VOLUME		3863524.595	
	L0003762	VOLUME		3863524.384	
LOCATION	L0003763	VOLUME		3863524.173	817.13
LOCATION	L0003764	VOLUME	382009.735	3863523.962	817.02
LOCATION	L0003765	VOLUME	382023.733	3863523.751	817.09
LOCATION	L0003766	VOLUME	382037.731	3863523.540	817.32
LOCATION	L0003767	VOLUME		3863512.426	817.19
LOCATION	L0003768	VOLUME		3863498.427	817.10
LOCATION	L0003769	VOLUME	382040.179	3863484.428	816.91
LOCATION	L0003770	VOLUME	382040.006	3863470.430	816.71
LOCATION	L0003771	VOLUME	382039.833	3863456.431	816.53
LOCATION	L0003772	VOLUME	382039.660	3863442.432	816.38
LOCATION	L0003773	VOLUME	382039.487	3863428.433	816.24
LOCATION	L0003774	VOLUME	382039.314	3863414.434	816.17
LOCATION	L0003775	VOLUME	382039.142	3863400.435	816.09
LOCATION	L0003776	VOLUME	382038.969	3863386.436	815.98
LOCATION	L0003777	VOLUME	382038.796	3863372.437	815.83
LOCATION	L0003778	VOLUME	382038.623	3863358.438	815.69
LOCATION	L0003779	VOLUME	382038.450	3863344.439	815.52
LOCATION	L0003780	VOLUME	382038.277	3863330.440	815.36
LOCATION	L0003781	VOLUME	382038.105	3863316.441	815.23
	L0003782	VOLUME		3863302.442	
	L0003783	VOLUME			814.90
	L0003784	VOLUME		3863274.444	
	L0003785	VOLUME		3863260.446	
	L0003785	VOLUME		3863246.447	814.49
	L0003787	VOLUME	382037.241	3863232.448	
	L0003788	VOLUME		3863218.449	814.12
	L0003788	VOLUME		3863204.450	
	L0003789	VOLUME		3863190.451	
	L0003790 L0003791	VOLUME	382036.376	3863176.452	
LOCATION	L0003791 L0003792			3863162.453	813.60
	L0003792 L0003793	VOLUME VOLUME		3863148.454	
	L0003793 L0003794				
		VOLUME		3863134.455	
	L0003795	VOLUME		3863120.456	
	L0003796	VOLUME		3863106.457	
	L0003797	VOLUME		3863092.458	
	L0003798	VOLUME		3863078.459	
	L0003799	VOLUME		3863064.460	
	L0003800	VOLUME		3863050.462	
	L0003801	VOLUME		3863036.463	
	L0003802	VOLUME		3863022.464	
	L0003803	VOLUME		3863008.465	
	L0003804	VOLUME		3862994.466	
	L0003805	VOLUME		3862980.467	
	L0003806	VOLUME		3862966.468	
	L0003807	VOLUME		3862952.469	
	L0003808	VOLUME		3862938.470	
LOCATION	L0003809	VOLUME	382033.266	3862924.471	810.53

	L0003810	VOLUME		3862910.472	
	L0003811	VOLUME	382032.920	3862896.473	810.20
	L0003812	VOLUME	382032.747	3862882.474	810.07
LOCATION	L0003813	VOLUME	382032.574	3862868.475	809.96
LOCATION	L0003814	VOLUME	382032.401	3862854.476	809.84
LOCATION	L0003815	VOLUME	382032.229	3862840.478	809.70
LOCATION	L0003816	VOLUME	382032.056	3862826.479	809.57
LOCATION	L0003817	VOLUME	382031.883	3862812.480	809.45
LOCATION	L0003818	VOLUME		3862798.481	809.34
LOCATION	L0003819	VOLUME	382031.537	3862784.482	809.22
LOCATION	L0003820	VOLUME		3862770.483	809.11
LOCATION	L0003821	VOLUME	382031.192	3862756.484	809.00
LOCATION	L0003822	VOLUME	382031.019	3862742.485	808.88
	L0003823	VOLUME	382030.846	3862728.486	808.72
LOCATION	L0003824	VOLUME	382030.673	3862714.487	808.56
LOCATION	L0003825	VOLUME	382030.500	3862700.488	808.42
LOCATION	L0003826	VOLUME	382030.327	3862686.489	808.26
LOCATION	L0003827	VOLUME	382030.155	3862672.490	808.10
LOCATION	L0003828	VOLUME	382029.982	3862658.491	807.95
LOCATION	L0003829	VOLUME	382029.809	3862644.492	807.75
LOCATION	L0003830	VOLUME	382029.636	3862630.494	807.56
	L0003831	VOLUME	382029.463	3862616.495	807.42
	L0003832	VOLUME	382029.291	3862602.496	807.28
LOCATION	L0003833	VOLUME	382029.118	3862588.497	807.14
LOCATION	L0003834	VOLUME	382028.945	3862574.498	806.99
LOCATION	L0003835	VOLUME	382028.772	3862560.499	806.83
LOCATION	L0003836	VOLUME	382028.599	3862546.500	806.67
LOCATION	L0003837	VOLUME	382028.426	3862532.501	806.50
LOCATION	L0003838	VOLUME	382028.254	3862518.502	806.34
LOCATION	L0003839	VOLUME	382028.081	3862504.503	806.18
LOCATION	L0003840	VOLUME	382028.041	3862490.504	806.03
LOCATION	L0003841	VOLUME	382028.104	3862476.504	805.91
LOCATION	L0003842	VOLUME	382028.167	3862462.504	805.79
	L0003843	VOLUME		3862448.504	
	L0003844	VOLUME		3862434.504	
LOCATION	L0003845	VOLUME	382028.356	3862420.504	805.40
LOCATION	L0003846	VOLUME		3862406.505	
LOCATION	L0003847	VOLUME	382028.482	3862392.505	805.10
LOCATION	L0003848	VOLUME	382028.545	3862378.505	804.97
LOCATION	L0003849	VOLUME	382028.608	3862364.505	804.82
LOCATION	L0003850	VOLUME	382028.671	3862350.505	804.67
LOCATION	L0003851	VOLUME	382028.734	3862336.505	804.52
LOCATION	L0003852	VOLUME	382028.797	3862322.505	804.38
LOCATION	L0003853	VOLUME		3862308.506	
LOCATION	L0003854	VOLUME	382028.924	3862294.506	804.14
LOCATION	L0003855	VOLUME	382028.987	3862280.506	804.01
LOCATION	L0003856	VOLUME	382029.050	3862266.506	803.89
LOCATION	L0003857	VOLUME	382029.113	3862252.506	803.76
LOCATION	L0003858	VOLUME	382029.176	3862238.506	803.62
LOCATION	L0003859	VOLUME	382029.239	3862224.506	803.46

LOCATION		VOLUME		3862210.507	803.29
LOCATION		VOLUME	382029.365	3862196.507	803.12
LOCATION		VOLUME	382029.428	3862182.507	802.96
LOCATION		VOLUME	382029.491	3862168.507	802.81
LOCATION		VOLUME	382029.554	3862154.507	802.66
LOCATION		VOLUME	382029.617	3862140.507	802.51
LOCATION		VOLUME	382029.680	3862126.507	802.36
LOCATION		VOLUME	382029.743	3862112.508	802.22
LOCATION		VOLUME	382029.806	3862098.508	802.09
LOCATION		VOLUME	382029.869	3862084.508	801.96
LOCATION		VOLUME	382029.933	3862070.508	801.85
LOCATION		VOLUME	382029.996	3862056.508	801.72
LOCATION		VOLUME	382030.059	3862042.508	801.61
LOCATION		VOLUME	382030.122	3862028.508	801.50
LOCATION		VOLUME	382030.185	3862014.509	801.39
LOCATION		VOLUME	382030.248	3862000.509	801.26
LOCATION		VOLUME	382030.311	3861986.509	801.15
LOCATION		VOLUME	382030.374	3861972.509	801.02
LOCATION		VOLUME	382030.437	3861958.509	800.89
LOCATION		VOLUME	382030.500	3861944.509	800.78
LOCATION		VOLUME	382030.563	3861930.509	800.66
LOCATION		VOLUME	382030.626	3861916.510	800.54
LOCATION		VOLUME		3861902.510	800.35
LOCATION		VOLUME	382030.752	3861888.510	800.19
LOCATION		VOLUME	382030.815	3861874.510	800.06
LOCATION		VOLUME	382030.878	3861860.510	799.93
	L0003886	VOLUME	382030.942	3861846.510	799.81
LOCATION	L0003887	VOLUME	382031.005		799.67
	L0003888	VOLUME	382031.068	3861818.511	799.52
LOCATION	L0003889	VOLUME	382031.131	3861804.511	799.37
LOCATION	L0003890	VOLUME	382031.194	3861790.511	799.24
LOCATION	L0003891	VOLUME	382031.257	3861776.511	799.10
	L0003892	VOLUME	382031.320	3861762.511	798.97
LOCATION		VOLUME		3861748.511	
LOCATION		VOLUME		3861734.511	
	L0003895	VOLUME		3861720.511	
	L0003896	VOLUME		3861706.512	
	L0003897	VOLUME		3861692.512	
	L0003898	VOLUME		3861678.512	
	L0003899	VOLUME		3861664.512	
	L0003900	VOLUME		3861650.512	
	L0003901	VOLUME		3861636.512	
LOCATION	L0003902	VOLUME		3861622.512	
	L0003903	VOLUME	382032.014	3861608.513	797.54
LOCATION	L0003904	VOLUME	382032.077	3861594.513	797.45
	L0003905	VOLUME		3861580.513	
	L0003906	VOLUME	382032.203	3861566.513	797.16
LOCATION	L0003907	VOLUME	382031.809	3861552.522	797.04
LOCATION	L0003908	VOLUME		3861538.536	
LOCATION	L0003909	VOLUME	382030.566	3861524.550	796.84

LOCATION		VOLUME		3861510.564	
LOCATION		VOLUME		3861496.578	
LOCATION		VOLUME		3861482.591	
LOCATION		VOLUME	382028.079	3861468.605	796.42
LOCATION		VOLUME	382027.457	3861454.619	796.27
LOCATION		VOLUME	382026.836	3861440.633	796.13
LOCATION		VOLUME	382026.214	3861426.647	796.01
LOCATION		VOLUME	382025.593	3861412.660	795.83
LOCATION		VOLUME		3861398.674	795.65
LOCATION		VOLUME	382024.349	3861384.688	795.46
LOCATION		VOLUME		3861370.702	795.24
LOCATION		VOLUME	382023.106	3861356.716	795.11
LOCATION		VOLUME	382022.485	3861342.729	795.02
LOCATION		VOLUME	382021.863	3861328.743	794.96
LOCATION		VOLUME		3861314.757	795.02
LOCATION		VOLUME		3861300.771	795.22
LOCATION		VOLUME	382019.998	3861286.785	795.54
LOCATION		VOLUME	382019.377	3861272.798	795.92
LOCATION		VOLUME	382018.755	3861258.812	796.31
LOCATION		VOLUME	382018.133	3861244.826	796.67
LOCATION		VOLUME		3861230.840	796.97
LOCATION		VOLUME		3861216.854	797.21
LOCATION		VOLUME		3861202.867	797.45
LOCATION	L0003933	VOLUME		3861188.881	797.72
LOCATION	L0003934	VOLUME	382012.908	3861175.308	797.80
LOCATION	L0003935	VOLUME	382008.226	3861162.114	797.85
LOCATION	L0003936	VOLUME	382003.545	3861148.920	797.83
LOCATION	L0003937	VOLUME	381998.863	3861135.726	797.82
LOCATION	L0003938	VOLUME	381994.181	3861122.532	797.75
LOCATION	L0003939	VOLUME	381989.500		797.64
LOCATION	L0003940	VOLUME	381984.818	3861096.144	797.53
LOCATION	L0003941	VOLUME	381980.136	3861082.950	797.46
LOCATION	L0003942	VOLUME	381975.454	3861069.756	797.32
LOCATION	L0003943	VOLUME	381970.773	3861056.562	797.11
LOCATION	L0003944	VOLUME	381966.091	3861043.368	796.72
LOCATION	L0003945	VOLUME	381961.409	3861030.174	796.50
LOCATION	L0003946	VOLUME	381956.727	3861016.980	796.27
LOCATION	L0003947	VOLUME	381952.046	3861003.786	796.14
LOCATION	L0003948	VOLUME	381947.364	3860990.592	795.93
LOCATION	L0003949	VOLUME	381942.682	3860977.398	795.91
LOCATION	L0003950	VOLUME	381938.000	3860964.204	795.78
LOCATION	L0003951	VOLUME	381933.319	3860951.010	795.65
LOCATION	L0003952	VOLUME	381928.637	3860937.816	795.56
LOCATION	L0003953	VOLUME	381923.955	3860924.622	795.60
LOCATION	L0003954	VOLUME	381919.273	3860911.428	795.65
LOCATION	L0003955	VOLUME	381914.592	3860898.234	795.67
LOCATION	L0003956	VOLUME		3860885.040	
LOCATION	L0003957	VOLUME		3860871.846	
LOCATION	L0003958	VOLUME	381900.546	3860858.652	795.60
LOCATION	L0003959	VOLUME		3860845.458	

LOCATION		VOLUME		3860832.264	
LOCATION		VOLUME			794.53
LOCATION		VOLUME	381881.820	3860805.877	794.13
LOCATION		VOLUME	381877.138	3860792.683	793.75
LOCATION		VOLUME	381871.946	3860779.684	793.33
LOCATION		VOLUME	381866.616	3860766.738	792.98
LOCATION		VOLUME	381861.285	3860753.793	792.58
LOCATION		VOLUME	381855.955	3860740.847	792.39
LOCATION		VOLUME		3860727.902	792.15
LOCATION		VOLUME		3860714.956	791.89
LOCATION		VOLUME	381839.963	3860702.011	791.67
LOCATION		VOLUME	381834.633	3860689.065	791.36
LOCATION		VOLUME	381829.302	3860676.120	791.05
LOCATION		VOLUME		3860663.174	790.60
LOCATION		VOLUME		3860650.229	790.24
LOCATION		VOLUME		3860637.283	789.95
LOCATION		VOLUME	381807.980	3860624.338	789.63
LOCATION		VOLUME	381802.650	3860611.392	789.37
LOCATION		VOLUME	381797.319	3860598.447	788.82
LOCATION		VOLUME	381791.989	3860585.501	788.33
LOCATION		VOLUME	381787.269	3860572.397	787.82
LOCATION		VOLUME	381785.600	3860558.497	787.52
LOCATION		VOLUME	381783.932	3860544.596	786.98
LOCATION	L0003983	VOLUME	381782.264	3860530.696	786.41
LOCATION	L0003984	VOLUME	381780.596	3860516.796	785.95
LOCATION	L0003985	VOLUME	381778.928	3860502.895	785.46
LOCATION	L0003986	VOLUME	381777.260	3860488.995	784.90
LOCATION	L0003987	VOLUME	381775.592	3860475.095	784.39
LOCATION	L0003988	VOLUME	381776.981	3860461.411	783.78
LOCATION	L0003989	VOLUME	381780.588	3860447.883	783.01
LOCATION	L0003990	VOLUME	381784.196	3860434.356	782.32
LOCATION	L0003991	VOLUME	381787.803	3860420.829	781.48
LOCATION	L0003992	VOLUME	381791.410	3860407.302	780.77
LOCATION	L0003993	VOLUME	381795.018	3860393.774	779.97
LOCATION	L0003994	VOLUME	381798.625	3860380.247	779.21
LOCATION	L0003995	VOLUME	381802.232	3860366.720	778.39
LOCATION	L0003996	VOLUME	381805.839	3860353.192	777.67
LOCATION	L0003997	VOLUME	381810.319	3860340.047	776.94
LOCATION	L0003998	VOLUME	381817.823	3860328.228	776.28
LOCATION	L0003999	VOLUME	381825.327	3860316.409	775.61
LOCATION	L0004000	VOLUME	381832.831	3860304.591	775.07
LOCATION	L0004001	VOLUME	381840.335	3860292.772	774.56
LOCATION	L0004002	VOLUME	381847.839	3860280.953	774.08
LOCATION	L0004003	VOLUME	381855.343	3860269.134	773.60
LOCATION	L0004004	VOLUME	381862.847	3860257.315	773.09
LOCATION	L0004005	VOLUME	381870.352	3860245.496	772.56
LOCATION	L0004006	VOLUME		3860233.677	
LOCATION	L0004007	VOLUME	381885.360	3860221.858	771.47
	L0004008	VOLUME		3860210.039	770.96
LOCATION	L0004009	VOLUME	381900.368	3860198.220	770.43

LOCATION		VOLUME		3860186.401	769.88
LOCATION		VOLUME	381915.376		769.36
LOCATION		VOLUME	381922.880	3860162.763	768.85
LOCATION		VOLUME	381930.384	3860150.944	768.37
LOCATION		VOLUME	381937.889	3860139.125	767.91
LOCATION		VOLUME	381945.393	3860127.306	767.48
LOCATION		VOLUME	381952.897	3860115.487	767.03
LOCATION		VOLUME	381960.401	3860103.668	766.57
LOCATION		VOLUME	381967.905	3860091.849	766.10
LOCATION		VOLUME	381975.409	3860080.030	765.67
LOCATION		VOLUME	381979.406	3860066.804	765.23
LOCATION		VOLUME	381982.152	3860053.076	764.85
LOCATION		VOLUME	381984.897	3860039.348	764.48
LOCATION		VOLUME	381987.643	3860025.619	764.20
LOCATION		VOLUME	381990.388	3860011.891	763.92
LOCATION		VOLUME	381993.134	3859998.163	763.70
LOCATION		VOLUME	381995.880	3859984.435	763.59
LOCATION		VOLUME	381998.625	3859970.707	763.51
LOCATION		VOLUME	382001.371	3859956.979	763.49
LOCATION		VOLUME	382004.117	3859943.251	763.52
LOCATION		VOLUME	382006.862	3859929.522	763.53
LOCATION		VOLUME	382005.998	3859915.558	763.54
LOCATION		VOLUME	382005.067	3859901.589	763.49
LOCATION		VOLUME	382004.135	3859887.620	763.40
LOCATION		VOLUME	382003.204	3859873.651	763.25
LOCATION		VOLUME	382002.649	3859859.668	763.06
	L0004036	VOLUME	382002.551	3859845.668	762.94
LOCATION	L0004037	VOLUME	382002.452	3859831.669	762.82
	L0004038	VOLUME	382002.353	3859817.669	762.68
	L0004039	VOLUME	382002.255	3859803.669	762.52
LOCATION	L0004040	VOLUME	382002.156	3859789.670	762.38
LOCATION	L0004041	VOLUME	382002.058	3859775.670	762.25
	L0004042	VOLUME	382001.959	3859761.670	762.14
LOCATION		VOLUME		3859747.671	
	L0004044	VOLUME		3859733.671	
	L0004045	VOLUME		3859719.672	
	L0004046	VOLUME		3859705.672	
	L0004047	VOLUME		3859691.672	
	L0004048	VOLUME		3859677.673	
	L0004049	VOLUME		3859663.673	
	L0004050	VOLUME		3859649.673	
	L0004051	VOLUME		3859635.674	
	L0004052	VOLUME		3859621.674	
	L0004053	VOLUME		3859607.674	
	L0004054	VOLUME		3859593.675	
	L0004055	VOLUME		3859579.675	
	L0004056	VOLUME		3859565.675	
	L0004057	VOLUME		3859551.676	
	L0004058	VOLUME		3859537.676	
LOCATION	L0004059	VOLUME	382000.283	3859523.676	758.91

	L0004060	VOLUME		3859509.677	
	L0004061	VOLUME			758.81
	L0004062	VOLUME	381999.987	3859481.677	758.75
	L0004063	VOLUME	381999.889	3859467.678	758.67
	L0004064	VOLUME	381999.790	3859453.678	758.54
	L0004065	VOLUME	381999.692	3859439.678	758.41
	L0004066	VOLUME	381999.593	3859425.679	758.26
	L0004067	VOLUME	381999.494	3859411.679	758.09
	L0004068	VOLUME	381999.396	3859397.680	757.92
	L0004069	VOLUME	381999.297	3859383.680	757.74
	L0004070	VOLUME		3859369.680	757.57
	L0004071	VOLUME		3859355.681	
	L0004072	VOLUME	381999.001	3859341.681	
	L0004073	VOLUME	381998.903	3859327.681	
	L0004074	VOLUME		3859313.682	
	L0004075	VOLUME			757.13
	L0004076	VOLUME		3859285.682	
	L0004077	VOLUME	381998.508	3859271.683	757.00
	L0004078	VOLUME	381998.410	3859257.683	756.91
	L0004079	VOLUME		3859243.683	756.80
	L0004080	VOLUME	381998.213	3859229.684	756.71
	L0004081	VOLUME		3859215.684	756.68
	L0004082	VOLUME		3859201.684	756.67
LOCATION	L0004083	VOLUME	381997.917	3859187.685	756.62
LOCATION	L0004084	VOLUME	381997.818	3859173.685	756.51
LOCATION	L0004085	VOLUME	381997.720	3859159.685	756.38
LOCATION	L0004086	VOLUME	381997.621	3859145.686	756.25
LOCATION	L0004087	VOLUME	381997.523	3859131.686	756.13
LOCATION	L0004088	VOLUME	381997.424	3859117.686	756.04
LOCATION	L0004089	VOLUME		3859103.687	755.98
LOCATION	L0004090	VOLUME	381997.227	3859089.687	755.94
LOCATION	L0004091	VOLUME	381997.128	3859075.688	755.90
LOCATION	L0004092	VOLUME	381997.030	3859061.688	755.88
LOCATION	L0004093	VOLUME	381996.931	3859047.688	755.84
LOCATION	L0004094	VOLUME	381996.832	3859033.689	755.74
LOCATION	L0004095	VOLUME	381996.734	3859019.689	755.66
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LOCATION	L0004097	VOLUME	381996.537	3858991.690	755.33
LOCATION	L0004098	VOLUME	381996.438	3858977.690	755.10
LOCATION	L0004099	VOLUME	381996.339	3858963.690	754.88
LOCATION	L0004100	VOLUME	381996.241	3858949.691	754.64
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LOCATION	L0004102	VOLUME	381996.044	3858921.691	754.08
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LOCATION	L0004109	VOLUME		3858823.694	

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   LOCATION L0004111
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   LOCATION L0004112
                         VOLUME
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  AREAVERT CSTN EX
  AREAVERT CSTN_EX
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                         382528.112 3863435.183 382532.027 3863415.608
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JINCE ANAPI	F0000114	0.001/72114/	J.∓€	0.71	٠. ٢٥

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JINCE ANAPI	L0000214	0.001/72114/	J.∓€	0.71	٥.١٥

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	L0000246	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000249	0.0017921147	3.40	6.51	3.16
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	L0000255	0.0017921147	3.40	6.51	3.16
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	L0000202		3.40	6.51	3.16
	L0000264	0.0017921147	3.40	6.51	3.16
SINCE ANAM	L0000204	0.001/72114/	J. 40	0.71	J. 10

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SRCPARAM	L0000268	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000269	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000270	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000271	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000272	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000274	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000276	0.0017921147	3.40	6.51	3.16
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	L0000300	0.0017921147		6.51	3.16
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SRCPARAM	L0000302	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000304	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000305	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000306	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000307	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000308	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000309	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000310	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000311	0.0017921147	3.40	6.51	3.16
	L0000312	0.0017921147	3.40	6.51	3.16
	L0000313	0.0017921147		6.51	
	L0000314	0.0017921147	3.40	6.51	3.16
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	L0000315	0.0017921147	3.40	6.51	3.16
	L0000316	0.0017921147	3.40	6.51	3.16
	L0000317	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000318	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000323	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000326	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000331	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000332	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000334	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000335	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000336	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000337	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000338	0.0017921147	3.40	6.51	3.16
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	L0000354	0.0017921147	3.40	6.51	3.16
	L0000355	0.0017921147		6.51	
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	L0000358	0.0017921147	3.40	6.51	3.16
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	L0000361	0.0017921147	3.40	6.51	3.16
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JINCI ANAM	L0000304	0.001/92114/	2.40	0.71	2.10

SRCPARAM		0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000371	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000372	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000373	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000374	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000375	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000377	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000387	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000391	0.0017921147	3.40	6.51	3.16
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SRCPARAM		0.0017921147	3.40	6.51	3.16
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SRCPARAM			3.40	6.51	3.16
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SRCPARAM		0.0017921147	3.40	6.51	3.16
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SRCPARAM		0.0017921147	3.40	6.51	3.16
SRCPARAM			3.40	6.51	3.16
	L0000412		3.40	6.51	3.16
	L0000413	0.0017921147	3.40	6.51	3.16
J	_0000114		J	J.J.	J • ± U

SRCPARAM	L0000415	0.0017921147	3.40	6.51	3.16
	L0000416	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000417	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000419	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000420	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000421	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000422	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000423	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000424	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000425	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000427	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000428	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000429	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000431	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000432	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000433	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000434	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000435	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000436	0.0017921147	3.40	6.51	3.16
	L0000437	0.0017921147	3.40	6.51	3.16
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	L0000455	0.0017921147	3.40	6.51	3.16
	L0000461	0.0017921147	3.40	6.51	3.16
	L0000461		3.40	6.51	3.16
	L0000462		3.40	6.51	3.16
	L0000464	0.0017921147	3.40	6.51	3.16
J	_0000107	· · · · · · · · · · · · · · · · · · ·	2	J.J.	J . ± U

SRCPARAM	L0000465	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000467	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000468	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000470	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000471	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000472	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000473	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000474	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000476	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000477	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000479	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000480	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000481	0.0017921147	3.40	6.51	3.16
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	L0000512	0.0017921147	3.40	6.51	3.16
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	L0000515	0.0017921147	3.40	6.51	3.16
JIC. AIAI	_0000JI-	J. J. J. J. Z. I. T. J.	3.40	0.51	5.10

SRCPARAM	L0000515	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000516	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000518	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000519	0.0017921147	3.40	6.51	3.16
	L0000520	0.0017921147	3.40	6.51	3.16
	L0000521	0.0017921147	3.40	6.51	3.16
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** Variable Emissions Type: "By Hour / Day (HRDOW)"
** Variable Emission Scenario: "Construction"
** WeekDays:
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  EMISFACT CSTN EX
                         HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
  EMISFACT CSTN_EX
                         HRDOW 1.0 1.0 1.0 0.0 0.0 0.0
   EMISFACT CSTN EX
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** Saturday:
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                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN EX
   EMISFACT CSTN EX
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                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN_EX
** Sunday:
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   EMISFACT CSTN EX
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   EMISFACT CSTN DST
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   EMISFACT CSTN_DST
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   EMISFACT CSTN DST
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** Saturday:
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   EMISFACT CSTN DST
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  SRCGROUP ONRD EX L0000553 L0000554 L0000555 L0000556 L0000557 L0000558
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** AERMOD Receptor Pathway
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RE STARTING
  INCLUDED "Bullhead Solar HRA.rou"
RE FINISHED
************
** AERMOD Meteorology Pathway
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  PROFFILE AERMET\722953.PFL
  SURFDATA 3183 2009 MOJAVE Airpot
  UAIRDATA 93214 2009
  PROFBASE 849.5 METERS
ME FINISHED
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  PLOTFILE PERIOD CSTN EX "Bullhead Solar HRA.AD\PE00G002.PLT" 33
  PLOTFILE PERIOD ONRD_DST "Bullhead Solar HRA.AD\PE00G003.PLT" 34
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** DESCPTN UTM: Universal Transverse Mercator
** DATUM
          North American Datum 1983
          CONUS
** DTMRGN
** UNITS
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** ZONE
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** ZONEINX 0
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** AERMOD Input Produced by:
** AERMOD View Ver. 11.0.1
** Lakes Environmental Software Inc.
** Date: 3/22/2023
** File: C:\Lakes\AERMOD View\BullheadSolar_AERMOD\Bullhead Solar PM10\Bullhead
Solar PM10.ADI
*************
***********
** AERMOD Control Pathway
************
**
CO STARTING
  TITLEONE C:\Lakes\AERMOD View\Bullhead Solar PM10\Bullhead Solar PM10.isc
  MODELOPT DFAULT CONC
  AVERTIME 24 PERIOD
  POLLUTID PM 10
  FLAGPOLE 1.50
  RUNORNOT RUN
  ERRORFIL "Bullhead Solar PM10.err"
CO FINISHED
*************
** AERMOD Source Pathway
************
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
                   AREAPOLY
  LOCATION CSTN EX
                              382026.985 3865138.229
                                                      839.730
** DESCRSRC Construction Area Exhaust
  LOCATION CSTN_DST
                    AREAPOLY
                              382026.985 3865138.229
                                                      839.730
** DESCRSRC Construction Area Dust
** ______
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = ONRD EX
** DESCRSRC Onroad Exhaust
** PREFIX
** Length of Side = 14.00
** Configuration = Adjacent
** Emission Rate = 1.0
** Vertical Dimension = 6.80
** SZINIT = 3.16
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LOCATION	L0005877	VOLUME		3863545.538	

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	L0006028	VOLUME		3863106.457	
	L0006029	VOLUME	382035.339	3863092.458	812.57
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		VOLUME	382033.093	3862910.472	
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	L0006061	VOLUME		3862644.492	
	L0006062	VOLUME		3862630.494	
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LOCATION	L0006068	VOLUME	382028.599	3862546.500	806.48
LOCATION	L0006069	VOLUME	382028.426	3862532.501	806.32
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	L0006071	VOLUME		3862504.503	
LOCATION	L0006072	VOLUME	382028.041	3862490.504	805.87
LOCATION	L0006073	VOLUME	382028.104	3862476.504	805.73
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LOCATION	L0006075	VOLUME	382028.230	3862448.504	805.47
LOCATION	L0006076	VOLUME	382028.293	3862434.504	805.34
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	L0006079	VOLUME		3862392.505	
	L0006080	VOLUME	382028.545	3862378.505	804.81
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	L0006082	VOLUME	382028.671	3862350.505	804.55
	L0006083	VOLUME	382028.734	3862336.505	804.42
	L0006084	VOLUME	382028.797	3862322.505	804.29
	L0006085	VOLUME	382028.860	3862308.506	804.16
	L0006086	VOLUME		3862294.506	804.02
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	L0005851	0.0017921147	3.40	6.51	3.16
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JIC. AIAH	_5555555	3.001, 72114/	3.40	0.51	2.10

SRCPARAM	L0005859	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0005862	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005863	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005864	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005865	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0005867	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005868	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005869	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005870	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005871	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005872	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0005874	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005875	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005876	0.0017921147	3.40	6.51	3.16
	L0005877	0.0017921147	3.40	6.51	3.16
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JINCFARAM	L0007300	0.001/32114/	J.40	0.51	3.10

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SRCPARAM	L0005913	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005914	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0005916	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005917	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005918	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005919	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005920	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005921	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005922	0.0017921147	3.40	6.51	3.16
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	L0005926	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005927	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0005940	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005941	0.0017921147	3.40	6.51	3.16
	L0005942	0.0017921147	3.40	6.51	3.16
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	L0005958	0.0017321147	3.40	6.51	3.16
JICI AIAII	F0003330	0.001/72114/	J.+0	0.71	5.10

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SRCPARAM	L0005962	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005963	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0005965	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005966	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005967	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005968	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005969	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005970	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0005971	0.0017921147	3.40	6.51	3.16
	L0005972	0.0017921147	3.40	6.51	3.16
SRCPARAM		0.0017921147	3.40	6.51	3.16
	L0005974	0.0017921147	3.40	6.51	3.16
	L0005975	0.0017921147	3.40	6.51	3.16
	L0005976	0.0017921147	3.40	6.51	3.16
	L0005977	0.0017921117	3.40	6.51	3.16
	L0005977	0.0017921147	3.40	6.51	3.16
	L0005970	0.0017921147	3.40	6.51	3.16
	L0005980	0.0017921147	3.40	6.51	3.16
SRCPARAM		0.0017921147	3.40	6.51	3.16
	L0005981	0.0017921147	3.40	6.51	3.16
	L0005982	0.0017921147	3.40	6.51	3.16
	L0005984	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0006005	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0006007	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0006015	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0006022	0.0017921147	3.40	6.51	3.16
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JINCFARAM	F0000000	0.001/32114/	J.40	0.51	3.10

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SRCPARAM	L0006071	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0006073	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006074	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006075	0.0017921147	3.40	6.51	3.16
	L0006076	0.0017921147	3.40	6.51	3.16
	L0006077	0.0017921147	3.40	6.51	3.16
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SINCHANAM	LOGOTOO	0.001/32114/	9+40	0.51	3.10

	L0006109	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0006111	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006112	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006113	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006114	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006115	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006116	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006117	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006118	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006119	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006120	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006121	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006122	0.0017921147	3.40	6.51	3.16
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	L0006137	0.0017921147	3.40	6.51	3.16
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	L0006145	0.0017921147	3.40	6.51	3.16
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	L0006147	0.0017921147	3.40	6.51	3.16
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	L0006148	0.0017921147	3.40	6.51	3.16
	L0006149	0.0017921147	3.40	6.51	3.16
	L0006150	0.0017921147	3.40	6.51	3.16
	L0006151	0.0017921147	3.40	6.51	3.16
	L0006152			6.51	
	L0006153	0.0017921147	3.40 3.40		3.16
	L0006154	0.0017921147		6.51	3.16
		0.0017921147	3.40	6.51	3.16
	L0006156	0.0017921147	3.40	6.51	3.16
	L0006157	0.0017921147	3.40	6.51	3.16
SKCPAKAM	L0006158	0.0017921147	3.40	6.51	3.16

	L0006159	0.0017921147	3.40	6.51	3.16
	L0006160	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006161	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006162	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006163	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006164	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006165	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006166	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006167	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006168	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006169	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006170	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006171	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006172	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006173	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006174	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006175	0.0017921147	3.40	6.51	3.16
	L0006176	0.0017921147	3.40	6.51	3.16
	L0006177	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006178	0.0017921147	3.40	6.51	3.16
	L0006179	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0006191	0.0017921147	3.40	6.51	3.16
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	L0006200	0.0017921147	3.40	6.51	3.16
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	L0006202	0.0017921147	3.40	6.51	3.16
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	L0006205	0.0017321147	3.40	6.51	3.16
	L0006207	0.0017321147	3.40	6.51	3.16
	L0006207	0.0017321147	3.40	6.51	3.16
SINCI AINAIN	L0000200	0.001/72114/	J. 4 0	0.71	٥. ٢٠

	L0006209	0.0017921147	3.40	6.51	3.16
	L0006210	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006211	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006212	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006213	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006214	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006215	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006216	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006217	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006218	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006219	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006220	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006221	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006222	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0006224	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006225	0.0017921147	3.40	6.51	3.16
	L0006226	0.0017921147	3.40	6.51	3.16
	L0006227	0.0017921147	3.40	6.51	3.16
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	L0006230	0.0017921147	3.40	6.51	3.16
	L0006231	0.0017921147	3.40	6.51	3.16
	L0006232	0.0017921147	3.40	6.51	3.16
	L0006233	0.0017921147	3.40	6.51	3.16
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	L0006230	0.0017921147	3.40	6.51	3.16
	L0006240	0.0017921147	3.40	6.51	3.16
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	L0006250 L0006251	0.0017921147	3.40		3.16
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	L0006252		3.40	6.51	3.16
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SKCPARAM	L0006258	0.0017921147	3.40	6.51	3.16

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	L0006260	0.0017921147	3.40	6.51	3.16
	L0006261	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006262	0.0017921147	3.40	6.51	3.16
	L0006263	0.0017921147	3.40	6.51	3.16
	L0006264	0.0017921147	3.40	6.51	3.16
	L0006265	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006266	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006267	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006268	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006269	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006270	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006271	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006272	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006273	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006274	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0006280	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0006281	0.0017921147	3.40	6.51	3.16
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	L0006299	0.0017921147		6.51	3.16
	L0006300	0.0017921147		6.51	3.16
	L0006301	0.0017921147	3.40	6.51	3.16
	L0006302	0.0017921147	3.40	6.51	3.16
	L0006302	0.0017921147	3.40	6.51	3.16
	L0006304	0.0017321147	3.40	6.51	3.16
	L0006305	0.0017921147	3.40	6.51	3.16
	L0006306	0.0017921147	3.40	6.51	
	L0006307	0.0017921147	3.40	6.51	
	L0006308	0.0017921147	3.40	6.51	3.16
SINCHARAM	F0000300	0.001/32114/	2.40	0.51	2.10

	SRCPARAM	L0006309	0.0017921147	3.40	6.51	3.16
	SRCPARAM	L0006310	0.0017921147	3.40	6.51	3.16
	SRCPARAM	L0006311	0.0017921147	3.40	6.51	3.16
	SRCPARAM	L0006312	0.0017921147	3.40	6.51	3.16
	SRCPARAM		0.0017921147	3.40	6.51	3.16
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	SRCPARAM		0.0017921147	3.40	6.51	3.16
	SRCPARAM		0.0017921147	3.40	6.51	3.16
		L0006327	0.0017921147	3.40	6.51	3.16
		L0006328	0.0017921147	3.40	6.51	3.16
	SRCPARAM		0.0017921147	3.40	6.51	3.16
	SRCPARAM		0.0017921147	3.40	6.51	3.16
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	SRCPARAM		0.0017921147	3.40	6.51	3.16
	SRCPARAM	L0006334	0.0017921147	3.40	6.51	3.16
		L0006335	0.0017921147	3.40	6.51	3.16
	SRCPARAM	L0006336	0.0017921147	3.40	6.51	3.16
	SRCPARAM	L0006337	0.0017921147	3.40	6.51	3.16
	SRCPARAM	L0006338	0.0017921147	3.40	6.51	3.16
	SRCPARAM	L0006339	0.0017921147	3.40	6.51	3.16
	SRCPARAM	L0006340	0.0017921147	3.40	6.51	3.16
	SRCPARAM	L0006341	0.0017921147	3.40	6.51	3.16
	SRCPARAM	L0006342	0.0017921147	3.40	6.51	3.16
	SRCPARAM	L0006343	0.0017921147	3.40	6.51	3.16
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	SRCPARAM	L0006346	0.0017921147	3.40	6.51	3.16
	SRCPARAM	L0006347	0.0017921147	3.40	6.51	3.16
	SRCPARAM	L0006348	0.0017921147	3.40	6.51	3.16
	SRCPARAM	L0006349	0.0017921147	3.40	6.51	3.16
	SRCPARAM	L0006350	0.0017921147	3.40	6.51	3.16
	SRCPARAM	L0006351	0.0017921147	3.40	6.51	3.16
	SRCPARAM	L0006352	0.0017921147	3.40	6.51	3.16
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			0.0017921147			
			0.0017921147		6.51	0.79
			0.0017921147		6.51	0.79

SRCPARAM	L0006357	0.0017921147	0.85	6.51	0.79
	L0006358	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0006359	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0006360	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0006361	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0006362	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0006363	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0006364	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0006365	0.0017921147	0.85	6.51	0.79
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SRCPARAM	L0006370	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0006371	0.0017921147	0.85	6.51	0.79
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SRCPARAM	L0006373	0.0017921147	0.85	6.51	0.79
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	L0006378	0.0017921147	0.85	6.51	0.79
	L0006379	0.0017921147	0.85	6.51	0.79
	L0006380	0.0017921147	0.85	6.51	0.79
	L0006381	0.0017921147	0.85	6.51	0.79
	L0006382	0.0017921147	0.85	6.51	0.79
	L0006383	0.0017921147	0.85	6.51	0.79
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	L0006399	0.0017921147	0.85	6.51	0.79
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	L0006402	0.0017921147	0.85	6.51	0.79
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SRCPARAM	L0006406	0.0017921147	0.85	6.51	0.79

	L0006407	0.0017921147	0.85	6.51	0.79
	L0006408	0.0017921147	0.85	6.51	0.79
	L0006409	0.0017921147	0.85	6.51	0.79
	L0006410	0.0017921147	0.85	6.51	0.79
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	L0006413	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0006414	0.0017921147	0.85	6.51	0.79
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SRCPARAM	L0006417	0.0017921147	0.85	6.51	0.79
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SRCPARAM	L0006427	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0006428	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0006429	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0006430	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0006431	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0006432	0.0017921147	0.85	6.51	0.79
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	L0006434	0.0017921147	0.85	6.51	0.79
	L0006435	0.0017921147	0.85	6.51	0.79
	L0006436	0.0017921147	0.85	6.51	0.79
	L0006437	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0006438	0.0017921147	0.85	6.51	0.79
	L0006439	0.0017921147	0.85	6.51	0.79
	L0006440	0.0017921147	0.85	6.51	0.79
SRCPARAM		0.0017921147	0.85	6.51	0.79
	L0006442	0.0017921147	0.85	6.51	0.79
	L0006443	0.0017921147	0.85	6.51	0.79
	L0006444	0.0017921147	0.85	6.51	0.79
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	L0006738	0.0017921147	0.85	6.51	0.79
	L0006739	0.0017921147	0.85	6.51	0.79
	L0006740	0.0017921147	0.85	6.51	0.79
	L0006741	0.0017921147	0.85	6.51	0.79
	L0006742	0.0017921147	0.85	6.51	0.79
	L0006743	0.0017921147	0.85	6.51	0.79
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	L0006745	0.0017921147	0.85	6.51	0.79
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	L0006747	0.0017921147	0.85	6.51	0.79
	L0006748	0.0017921147	0.85	6.51	0.79
	L0006749	0.0017921147	0.85	6.51	0.79
	L0006750	0.0017921147	0.85	6.51	0.79
	L0006751	0.0017921147	0.85	6.51	0.79
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	L0006754	0.0017921147	0.85	6.51	0.79
	L0006755	0.0017921147	0.85	6.51	0.79
	L0006756	0.0017921147	0.85	6.51	0.79
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	L0006761	0.0017921117	0.85	6.51	0.79
	L0006762	0.0017921117	0.85	6.51	0.79
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	L0006767	0.0017921147	0.85	6.51	0.79
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	L0006772	0.0017921147	0.85	6.51	0.79
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	L0006779	0.0017921147	0.85	6.51	0.79
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	L0006789	0.0017921147	0.85	6.51	0.79
SRCPARAM		0.0017921147			
		0.0017921147	0.85	6.51	0.79
	L0006792 L0006793	0.0017921147	0.85 0.85	6.51 6.51	0.79 0.79
	L0006793	0.0017921147	0.85	6.51	0.79
	L0006794			6.51	
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	L0006796	0.0017921147 0.0017921147	0.85	6.51	0.79
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	L0006803	0.0017921147	0.85	6.51	0.79
	L0006804	0.0017921147	0.85	6.51	0.79
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SKCPAKAM	L0006806	0.0017921147	0.85	6.51	0.79

SRCPARAM	L0006807	0.0017921147	0.85	6.51	0.79
	L0006808	0.0017921147	0.85	6.51	0.79
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SRCPARAM	L0006810	0.0017921147	0.85	6.51	0.79
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SRCPARAM	L0006817	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0006818	0.0017921147	0.85	6.51	0.79
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SRCPARAM	L0006820	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0006821	0.0017921147	0.85	6.51	0.79
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SRCPARAM	L0006860	0.0017921147	0.85	6.51	0.79
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SRCPARAM	L0006869	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0006870	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0006871	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0006872	0.0017921147	0.85	6.51	0.79
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	L0006875	0.0017921147	0.85	6.51	0.79
	L0006876	0.0017921147	0.85	6.51	0.79
	L0006877	0.0017921147	0.85	6.51	0.79
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	L0006879	0.0017921147	0.85	6.51	0.79
	L0006880	0.0017921147	0.85	6.51	0.79
	L0006881	0.0017921147	0.85	6.51	0.79
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		0.0017921147	0.85	6.51	0.79
	L0006895	0.0017921147	0.85	6.51	0.79
	L0006896	0.0017921147	0.85	6.51	0.79
	L0006897	0.0017921147	0.85	6.51	0.79
	L0006898	0.0017921147	0.85	6.51	0.79
	L0006899	0.0017921147	0.85	6.51	0.79
	L0006900	0.0017921147	0.85	6.51	0.79
	L0006901	0.0017921147	0.85	6.51	0.79
	L0006902	0.0017921147	0.85	6.51	0.79
	L0006903	0.0017921147	0.85	6.51	0.79
	L0006904	0.0017921147	0.85	6.51	0.79
	L0006905	0.0017921147	0.85	6.51	0.79
SKCPARAM	L0006906	0.0017921147	0.85	6.51	0.79

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SRCPARAM L0006907
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                                                               0.79
                                           0.85
                                                     6.51
                                                               0.79
  SRCPARAM L0006908
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                                           0.85
                                                     6.51
                                           0.85
                                                     6.51
                                                               0.79
  SRCPARAM L0006909
                         0.0017921147
  SRCPARAM L0006910
                         0.0017921147
                                           0.85
                                                     6.51
                                                               0.79
** Variable Emissions Type: "By Hour / Day (HRDOW)"
** Variable Emission Scenario: "Construction"
** WeekDays:
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT CSTN EX
  EMISFACT CSTN EX
                         HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
  EMISFACT CSTN_EX
                         HRDOW 1.0 1.0 1.0 0.0 0.0 0.0
   EMISFACT CSTN EX
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Saturday:
  EMISFACT CSTN_EX
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN EX
   EMISFACT CSTN EX
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN_EX
** Sunday:
   EMISFACT CSTN_EX
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN_EX
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN EX
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN_EX
** WeekDays:
   EMISFACT CSTN DST
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN DST
                         HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT CSTN_DST
                         HRDOW 1.0 1.0 1.0 0.0 0.0 0.0
   EMISFACT CSTN DST
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Saturday:
   EMISFACT CSTN_DST
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN DST
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN_DST
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN_DST
** Sunday:
   EMISFACT CSTN DST
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN_DST
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN DST
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN DST
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** WeekDays:
   EMISFACT L0005795
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   EMISFACT L0005795
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   EMISFACT L0005795
                         HRDOW 1.0 1.0 1.0 0.0 0.0 0.0
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT L0005795
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   EMISFACT L0005796
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   EMISFACT L0005796
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EMISFACT L0006902
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EMISFACT L0006905
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EMISFACT L0006905
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EMISFACT L0006909
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EMISFACT L0006910
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SRCGROUP CSTN EX CSTN EX
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SRCGROUP ONRD DST L0006491 L0006492 L0006493 L0006494 L0006495 L0006496
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SRCGROUP ONRD DST L0006503 L0006504 L0006505 L0006506 L0006507 L0006508
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**
************
** AERMOD Receptor Pathway
************
**
**
RE STARTING
   INCLUDED "Bullhead Solar PM10.rou"
RE FINISHED
***********
** AERMOD Meteorology Pathway
**************
**
**
ME STARTING
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  PROFFILE AERMET\722953.PFL
  SURFDATA 3183 2009 MOJAVE Airpot
  UAIRDATA 93214 2009
  PROFBASE 849.5 METERS
ME FINISHED
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** AERMOD Output Pathway
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OU STARTING
  RECTABLE ALLAVE 1ST
  RECTABLE 24 1ST
** Auto-Generated Plotfiles
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  PLOTFILE 24 CSTN DST 1ST "BULLHEAD SOLAR PM10.AD\24H1G001.PLT" 32
  PLOTFILE 24 CSTN EX 1ST "BULLHEAD SOLAR PM10.AD\24H1G002.PLT" 33
  PLOTFILE 24 ONRD_DST 1ST "BULLHEAD SOLAR PM10.AD\24H1G003.PLT" 34
  PLOTFILE 24 ONRD_EX 1ST "BULLHEAD SOLAR PM10.AD\24H1G004.PLT" 35
  PLOTFILE PERIOD ALL "BULLHEAD SOLAR PM10.AD\PE00GALL.PLT" 36
  PLOTFILE PERIOD CSTN_DST "BULLHEAD SOLAR PM10.AD\PE00G001.PLT" 37
  PLOTFILE PERIOD CSTN EX "BULLHEAD SOLAR PM10.AD\PE00G002.PLT" 38
  PLOTFILE PERIOD ONRD_DST "BULLHEAD SOLAR PM10.AD\PE00G003.PLT" 39
  PLOTFILE PERIOD ONRD_EX "BULLHEAD SOLAR PM10.AD\PE00G004.PLT" 40
  SUMMFILE "Bullhead Solar PM10.sum"
OU FINISHED
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** Project Parameters
** PROJCTN CoordinateSystemUTM
** DESCPTN UTM: Universal Transverse Mercator
** DATUM
           North American Datum 1983
** DTMRGN
           CONUS
** UNITS
           m
** ZONE
           11
** ZONEINX 0
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** AERMOD Input Produced by:
** AERMOD View Ver. 11.0.1
** Lakes Environmental Software Inc.
** Date: 3/22/2023
** File: C:\Lakes\AERMOD View\BullheadSolar_AERMOD\Bullhead Solar PM25\Bullhead
Solar PM25.ADI
**************
************
** AERMOD Control Pathway
************
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  MODELOPT DFAULT CONC
  AVERTIME 24 PERIOD
  POLLUTID PM 2.5
  FLAGPOLE 1.50
  RUNORNOT RUN
  ERRORFIL "Bullhead Solar PM25.err"
CO FINISHED
*************
** AERMOD Source Pathway
************
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
                    AREAPOLY
  LOCATION CSTN EX
                               382026.985 3865138.229
                                                         839.730
** DESCRSRC Construction Area Exhaust
  LOCATION CSTN DST
                     AREAPOLY
                               382026.985 3865138.229
                                                         839.730
** DESCRSRC Construction Area Dust
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = ONRD EX
** DESCRSRC Onroad Exhaust
** PREFIX
** Length of Side = 14.00
** Configuration = Adjacent
** Emission Rate = 1.0
** Vertical Dimension = 6.80
** SZINIT = 3.16
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** 382040.661, 3863523.496, 817.38, 3.40, 6.51
** 382028.005, 3862498.383, 805.94, 3.40, 6.51
** 382032.224, 3861561.860, 797.14, 3.40, 6.51
** 382015.349, 3861182.188, 797.05, 3.40, 6.51
** 381876.137, 3860789.861, 793.24, 3.40, 6.51
** 381787.547, 3860574.714, 787.74, 3.40, 6.51
** 381774.891, 3860469.249, 783.65, 3.40, 6.51
** 381808.639, 3860342.692, 777.16, 3.40, 6.51
** 381977.382, 3860076.922, 766.30, 3.40, 6.51
** 382006.912, 3859929.272, 763.47, 3.40, 6.51
** 382002.694, 3859865.994, 763.26, 3.40, 6.51
** 381994.257, 3858667.919, 748.29, 3.40, 6.51
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   LOCATION L0000002
                         VOLUME
                                  379209.906 3863552.922 845.16
                         VOLUME
   LOCATION L0000003
                                  379223.906 3863552.853 845.15
   LOCATION L0000004
                         VOLUME
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   LOCATION L0000005
                         VOLUME
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   LOCATION L0000006
                         VOLUME
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   LOCATION L0000007
                         VOLUME
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   LOCATION L0000008
                         VOLUME
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   LOCATION L0000009
                         VOLUME
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   LOCATION L0000010
                         VOLUME
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                         VOLUME
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   LOCATION L0000012
                         VOLUME
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   LOCATION L0000015
                         VOLUME
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                         VOLUME
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   LOCATION L0000033
                         VOLUME
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	L0000037	VOLUME	379699.900	3863550.508	838.55
	L0000038	VOLUME	379713.900	3863550.439	838.36
	L0000039	VOLUME	379727.900	3863550.371	838.16
	L0000040	VOLUME	379741.899	3863550.302	837.93
	L0000041	VOLUME	379755.899	3863550.233	837.68
	L0000042	VOLUME	379769.899	3863550.164	837.40
	L0000043	VOLUME	379783.899	3863550.095	837.15
	L0000044	VOLUME	379797.899	3863550.026	836.92
	L0000045	VOLUME	379811.899	3863549.957	836.70
	L0000046	VOLUME	379825.898	3863549.888	836.48
	L0000047	VOLUME	379839.898	3863549.819	836.29
	L0000048	VOLUME	379853.898	3863549.750	836.10
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	L0000050	VOLUME	379881.898	3863549.612	835.89
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LOCATION	L0000052	VOLUME	379909.897	3863549.474	835.80
LOCATION	L0000053	VOLUME	379923.897	3863549.405	835.72
LOCATION	L0000054	VOLUME	379937.897	3863549.336	835.59
LOCATION	L0000055	VOLUME	379951.897	3863549.267	835.44
LOCATION	L0000056	VOLUME	379965.897	3863549.198	835.23
LOCATION	L0000057	VOLUME	379979.896	3863549.129	835.01
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LOCATION	L0000060	VOLUME	380021.896	3863548.922	834.39
LOCATION	L0000061	VOLUME	380035.896	3863548.853	834.22
LOCATION	L0000062	VOLUME	380049.895	3863548.756	834.07
LOCATION	L0000063	VOLUME	380063.895	3863548.603	833.96
LOCATION	L0000064	VOLUME	380077.894	3863548.450	833.86
LOCATION	L0000065	VOLUME	380091.893	3863548.297	833.74
LOCATION	L0000066	VOLUME	380105.892	3863548.143	833.63
LOCATION	L0000067	VOLUME	380119.891	3863547.990	833.46
LOCATION	L0000068	VOLUME	380133.890	3863547.837	833.29
LOCATION	L0000069	VOLUME	380147.890	3863547.684	833.07
LOCATION	L0000070	VOLUME	380161.889	3863547.530	832.87
LOCATION	L0000071	VOLUME	380175.888	3863547.377	832.71
LOCATION	L0000072	VOLUME	380189.887	3863547.224	832.58
LOCATION	L0000073	VOLUME	380203.886	3863547.070	832.46
LOCATION	L0000074	VOLUME	380217.885	3863546.917	832.36
LOCATION	L0000075	VOLUME	380231.885	3863546.764	832.26
LOCATION	L0000076	VOLUME		3863546.611	
LOCATION		VOLUME		3863546.457	
LOCATION		VOLUME		3863546.304	
LOCATION		VOLUME		3863546.151	
LOCATION		VOLUME		3863545.998	
LOCATION		VOLUME		3863545.844	
LOCATION		VOLUME		3863545.691	
LOCATION		VOLUME		3863545.538	
		· · -			

LOCATION		VOLUME		3863545.384	
LOCATION		VOLUME		3863545.231	
LOCATION		VOLUME	380385.875	3863545.078	
LOCATION		VOLUME	380399.874	3863544.925	830.32
LOCATION		VOLUME	380413.874	3863544.771	830.13
LOCATION		VOLUME	380427.873	3863544.618	829.99
LOCATION		VOLUME	380441.872	3863544.465	829.83
LOCATION		VOLUME	380455.871	3863544.312	
LOCATION		VOLUME		3863544.158	829.45
LOCATION		VOLUME	380483.869	3863544.005	829.23
LOCATION		VOLUME		3863543.852	
LOCATION		VOLUME		3863543.698	828.78
LOCATION		VOLUME	380525.867	3863543.545	828.61
LOCATION		VOLUME		3863543.392	
LOCATION		VOLUME		3863543.239	828.28
LOCATION		VOLUME		3863543.085	828.12
LOCATION		VOLUME		3863542.932	
LOCATION		VOLUME	380595.863	3863542.779	827.84
LOCATION		VOLUME	380609.862	3863542.625	827.72
LOCATION		VOLUME	380623.861	3863542.472	827.65
LOCATION		VOLUME	380637.860		827.60
LOCATION		VOLUME	380651.859	3863542.166	827.54
LOCATION		VOLUME		3863542.012	
LOCATION		VOLUME		3863541.859	
LOCATION		VOLUME	380693.857	3863541.706	827.12
LOCATION	L0000109	VOLUME	380707.856	3863541.553	826.90
LOCATION		VOLUME	380721.855	3863541.399	826.68
LOCATION		VOLUME	380735.854	3863541.246	826.47
LOCATION	L0000112	VOLUME	380749.853	3863541.093	826.31
LOCATION		VOLUME		3863540.939	826.17
LOCATION		VOLUME		3863540.786	826.05
LOCATION		VOLUME		3863540.633	825.92
	L0000116	VOLUME	380805.850	3863540.480	825.78
LOCATION	L0000117	VOLUME	380819.849	3863540.326	825.63
LOCATION	L0000118	VOLUME	380833.848	3863540.173	825.46
LOCATION	L0000119	VOLUME	380847.848	3863540.020	825.29
LOCATION	L0000120	VOLUME		3863539.867	
LOCATION	L0000121	VOLUME	380875.846	3863539.713	824.95
LOCATION	L0000122	VOLUME	380889.845	3863539.560	824.81
LOCATION	L0000123	VOLUME	380903.844	3863539.407	824.70
LOCATION	L0000124	VOLUME	380917.843	3863539.253	824.60
LOCATION	L0000125	VOLUME	380931.843	3863539.100	824.50
LOCATION	L0000126	VOLUME	380945.842	3863538.947	824.39
LOCATION	L0000127	VOLUME	380959.841	3863538.794	824.27
LOCATION	L0000128	VOLUME	380973.840	3863538.640	824.14
LOCATION	L0000129	VOLUME	380987.839	3863538.487	824.01
LOCATION	L0000130	VOLUME	381001.838	3863538.334	823.89
LOCATION	L0000131	VOLUME	381015.838	3863538.180	823.77
LOCATION	L0000132	VOLUME	381029.837	3863538.027	823.68
LOCATION	L0000133	VOLUME	381043.836	3863537.874	823.59

	L0000134	VOLUME		3863537.721	
	L0000135	VOLUME		3863537.567	
	L0000136	VOLUME		3863537.414	
	L0000137	VOLUME		3863537.261	
	L0000138	VOLUME	381113.832	3863537.108	
	L0000139	VOLUME	381127.831	3863536.954	
	L0000140	VOLUME	381141.830	3863536.801	
	L0000141	VOLUME	381155.829	3863536.648	
	L0000142	VOLUME		3863536.494	
	L0000143	VOLUME		3863536.341	
	L0000144	VOLUME		3863536.188	
	L0000145	VOLUME		3863535.991	
	L0000146	VOLUME		3863535.780	822.98
	L0000147	VOLUME		3863535.569	822.73
	L0000148	VOLUME		3863535.358	
	L0000149	VOLUME		3863535.147	
	L0000150	VOLUME	381281.817	3863534.935	
	L0000151	VOLUME	381295.816	3863534.724	821.70
	L0000152	VOLUME		3863534.513	821.53
	L0000153	VOLUME		3863534.302	
	L0000154	VOLUME		3863534.091	821.23
LOCATION	L0000155	VOLUME		3863533.880	821.10
LOCATION	L0000156	VOLUME	381365.808	3863533.669	820.99
LOCATION	L0000157	VOLUME	381379.806	3863533.458	820.87
LOCATION	L0000158	VOLUME	381393.805	3863533.247	820.75
LOCATION	L0000159	VOLUME	381407.803	3863533.036	820.60
LOCATION	L0000160	VOLUME	381421.801	3863532.825	820.44
LOCATION	L0000161	VOLUME	381435.800	3863532.614	820.31
LOCATION	L0000162	VOLUME	381449.798	3863532.403	820.18
LOCATION	L0000163	VOLUME	381463.797	3863532.192	820.07
LOCATION	L0000164	VOLUME	381477.795	3863531.981	819.97
LOCATION	L0000165	VOLUME	381491.793	3863531.770	819.88
LOCATION	L0000166	VOLUME	381505.792	3863531.559	819.80
LOCATION	L0000167	VOLUME	381519.790	3863531.348	819.73
LOCATION	L0000168	VOLUME	381533.789	3863531.137	819.66
LOCATION	L0000169	VOLUME	381547.787	3863530.926	819.60
LOCATION	L0000170	VOLUME	381561.785	3863530.715	819.54
LOCATION	L0000171	VOLUME	381575.784	3863530.504	819.48
LOCATION	L0000172	VOLUME	381589.782	3863530.293	819.42
LOCATION	L0000173	VOLUME	381603.781	3863530.082	819.36
LOCATION	L0000174	VOLUME	381617.779	3863529.871	819.30
LOCATION	L0000175	VOLUME	381631.777	3863529.660	819.24
LOCATION	L0000176	VOLUME	381645.776	3863529.449	819.18
LOCATION	L0000177	VOLUME	381659.774	3863529.238	819.12
LOCATION	L0000178	VOLUME	381673.773	3863529.027	819.06
LOCATION	L0000179	VOLUME	381687.771	3863528.816	819.01
LOCATION	L0000180	VOLUME	381701.770	3863528.605	818.96
LOCATION	L0000181	VOLUME	381715.768	3863528.394	818.92
LOCATION	L0000182	VOLUME		3863528.182	
LOCATION	L0000183	VOLUME		3863527.971	

	L0000184	VOLUME		3863527.760	
	L0000185	VOLUME		3863527.549	
	L0000186	VOLUME		3863527.338	
	L0000187	VOLUME	381799.758	3863527.127	818.61
	L0000188	VOLUME	381813.757	3863526.916	818.52
	L0000189	VOLUME	381827.755	3863526.705	818.42
	L0000190	VOLUME	381841.754	3863526.494	818.35
	L0000191	VOLUME		3863526.283	818.29
	L0000192	VOLUME		3863526.072	
	L0000193	VOLUME		3863525.861	
	L0000194	VOLUME		3863525.650	818.20
	L0000195	VOLUME		3863525.439	818.14
	L0000196	VOLUME		3863525.228	818.06
	L0000197	VOLUME		3863525.017	817.95
	L0000198	VOLUME		3863524.806	
	L0000199	VOLUME		3863524.595	
	L0000200	VOLUME		3863524.384	
	L0000201	VOLUME	381995.736	3863524.173	817.48
	L0000202	VOLUME	382009.735	3863523.962	817.40
	L0000203	VOLUME	382023.733	3863523.751	817.38
	L0000204	VOLUME		3863523.540	817.41
	L0000205	VOLUME		3863512.426	817.32
	L0000206	VOLUME		3863498.427	817.15
LOCATION	L0000207	VOLUME	382040.179	3863484.428	817.01
LOCATION	L0000208	VOLUME		3863470.430	816.87
LOCATION	L0000209	VOLUME	382039.833	3863456.431	816.72
LOCATION	L0000210	VOLUME	382039.660	3863442.432	816.57
LOCATION	L0000211	VOLUME	382039.487	3863428.433	816.45
LOCATION	L0000212	VOLUME	382039.314	3863414.434	816.33
LOCATION	L0000213	VOLUME	382039.142	3863400.435	816.21
LOCATION	L0000214	VOLUME	382038.969		816.07
LOCATION	L0000215	VOLUME	382038.796	3863372.437	815.93
LOCATION	L0000216	VOLUME	382038.623	3863358.438	815.78
LOCATION	L0000217	VOLUME	382038.450	3863344.439	815.63
LOCATION	L0000218	VOLUME	382038.277	3863330.440	815.48
LOCATION	L0000219	VOLUME	382038.105	3863316.441	815.33
LOCATION	L0000220	VOLUME	382037.932	3863302.442	815.17
LOCATION	L0000221	VOLUME	382037.759	3863288.443	815.01
LOCATION	L0000222	VOLUME	382037.586	3863274.444	814.86
LOCATION	L0000223	VOLUME	382037.413	3863260.446	814.71
LOCATION	L0000224	VOLUME	382037.241	3863246.447	814.57
LOCATION	L0000225	VOLUME	382037.068	3863232.448	814.42
LOCATION	L0000226	VOLUME	382036.895	3863218.449	814.28
LOCATION	L0000227	VOLUME	382036.722	3863204.450	814.11
LOCATION	L0000228	VOLUME	382036.549	3863190.451	813.95
LOCATION	L0000229	VOLUME	382036.376	3863176.452	813.82
LOCATION	L0000230	VOLUME	382036.204	3863162.453	813.68
LOCATION	L0000231	VOLUME	382036.031	3863148.454	813.54
LOCATION	L0000232	VOLUME	382035.858	3863134.455	813.40
	L0000233	VOLUME		3863120.456	

	L0000234	VOLUME		3863106.457	
	L0000235	VOLUME		3863092.458	
	L0000236	VOLUME	382035.167	3863078.459	
	L0000237	VOLUME	382034.994	3863064.460	812.48
	L0000238	VOLUME	382034.821	3863050.462	812.27
	L0000239	VOLUME	382034.648	3863036.463	812.06
	L0000240	VOLUME	382034.475	3863022.464	811.87
	L0000241	VOLUME	382034.302	3863008.465	811.69
	L0000242	VOLUME		3862994.466	811.52
	L0000243	VOLUME	382033.957	3862980.467	811.36
	L0000244	VOLUME		3862966.468	811.19
	L0000245	VOLUME		3862952.469	811.01
	L0000246	VOLUME	382033.438	3862938.470	810.83
	L0000247	VOLUME		3862924.471	
	L0000248	VOLUME	382033.093	3862910.472	
	L0000249	VOLUME			810.34
	L0000250	VOLUME	382032.747	3862882.474	
	L0000251	VOLUME		3862868.475	810.05
	L0000252	VOLUME	382032.401	3862854.476	809.91
	L0000253	VOLUME	382032.229	3862840.478	809.78
	L0000254	VOLUME	382032.056	3862826.479	809.65
	L0000255	VOLUME	382031.883	3862812.480	809.53
	L0000256	VOLUME		3862798.481	809.41
LOCATION	L0000257	VOLUME	382031.537	3862784.482	809.28
LOCATION	L0000258	VOLUME	382031.364	3862770.483	809.15
LOCATION	L0000259	VOLUME	382031.192	3862756.484	809.02
LOCATION	L0000260	VOLUME	382031.019	3862742.485	808.91
LOCATION	L0000261	VOLUME	382030.846	3862728.486	808.79
LOCATION	L0000262	VOLUME	382030.673	3862714.487	808.65
LOCATION	L0000263	VOLUME	382030.500	3862700.488	808.52
LOCATION	L0000264	VOLUME	382030.327	3862686.489	808.36
LOCATION	L0000265	VOLUME	382030.155	3862672.490	808.19
LOCATION	L0000266	VOLUME	382029.982	3862658.491	808.02
LOCATION	L0000267	VOLUME	382029.809	3862644.492	807.85
LOCATION	L0000268	VOLUME	382029.636	3862630.494	807.67
LOCATION	L0000269	VOLUME	382029.463	3862616.495	807.49
LOCATION	L0000270	VOLUME	382029.291	3862602.496	807.33
LOCATION	L0000271	VOLUME	382029.118	3862588.497	807.18
LOCATION	L0000272	VOLUME	382028.945	3862574.498	807.03
LOCATION	L0000273	VOLUME	382028.772	3862560.499	806.86
LOCATION	L0000274	VOLUME	382028.599	3862546.500	806.69
LOCATION	L0000275	VOLUME	382028.426	3862532.501	806.52
LOCATION	L0000276	VOLUME	382028.254	3862518.502	806.35
LOCATION	L0000277	VOLUME	382028.081	3862504.503	806.19
LOCATION	L0000278	VOLUME	382028.041	3862490.504	806.03
LOCATION	L0000279	VOLUME	382028.104	3862476.504	805.88
LOCATION	L0000280	VOLUME	382028.167	3862462.504	805.75
LOCATION	L0000281	VOLUME	382028.230	3862448.504	805.62
LOCATION	L0000282	VOLUME		3862434.504	
	L0000283	VOLUME		3862420.504	

LOCATION		VOLUME		3862406.505	
LOCATION		VOLUME		3862392.505	805.04
LOCATION		VOLUME	382028.545	3862378.505	804.89
LOCATION		VOLUME	382028.608	3862364.505	804.74
LOCATION		VOLUME	382028.671	3862350.505	804.59
LOCATION		VOLUME	382028.734	3862336.505	804.44
LOCATION		VOLUME	382028.797	3862322.505	804.30
LOCATION		VOLUME	382028.860	3862308.506	804.16
LOCATION		VOLUME		3862294.506	804.03
LOCATION		VOLUME	382028.987	3862280.506	803.90
LOCATION		VOLUME		3862266.506	803.78
LOCATION		VOLUME		3862252.506	803.65
LOCATION		VOLUME	382029.176	3862238.506	803.52
LOCATION		VOLUME		3862224.506	803.37
LOCATION		VOLUME		3862210.507	803.21
LOCATION		VOLUME		3862196.507	803.05
LOCATION		VOLUME	382029.428	3862182.507	802.90
LOCATION		VOLUME	382029.491	3862168.507	802.75
LOCATION		VOLUME	382029.554	3862154.507	802.60
LOCATION		VOLUME	382029.617	3862140.507	802.46
LOCATION		VOLUME	382029.680	3862126.507	802.32
LOCATION		VOLUME	382029.743	3862112.508	802.18
LOCATION		VOLUME	382029.806	3862098.508	802.05
LOCATION	L0000307	VOLUME	382029.869	3862084.508	801.91
LOCATION	L0000308	VOLUME	382029.933	3862070.508	801.78
LOCATION	L0000309	VOLUME	382029.996	3862056.508	801.66
LOCATION	L0000310	VOLUME	382030.059	3862042.508	801.55
LOCATION	L0000311	VOLUME	382030.122	3862028.508	801.44
LOCATION	L0000312	VOLUME	382030.185	3862014.509	801.34
LOCATION	L0000313	VOLUME	382030.248	3862000.509	801.23
LOCATION	L0000314	VOLUME	382030.311	3861986.509	801.11
LOCATION	L0000315	VOLUME	382030.374	3861972.509	800.99
LOCATION	L0000316	VOLUME	382030.437	3861958.509	800.87
LOCATION	L0000317	VOLUME	382030.500	3861944.509	800.76
LOCATION	L0000318	VOLUME	382030.563	3861930.509	800.64
LOCATION	L0000319	VOLUME	382030.626	3861916.510	800.52
LOCATION	L0000320	VOLUME	382030.689	3861902.510	800.40
LOCATION	L0000321	VOLUME	382030.752	3861888.510	800.26
LOCATION	L0000322	VOLUME	382030.815	3861874.510	800.10
LOCATION	L0000323	VOLUME	382030.878	3861860.510	799.95
LOCATION	L0000324	VOLUME	382030.942	3861846.510	799.80
LOCATION	L0000325	VOLUME	382031.005	3861832.510	799.65
LOCATION	L0000326	VOLUME	382031.068	3861818.511	799.51
LOCATION	L0000327	VOLUME	382031.131	3861804.511	799.37
LOCATION	L0000328	VOLUME	382031.194	3861790.511	799.23
LOCATION	L0000329	VOLUME	382031.257	3861776.511	799.09
LOCATION	L0000330	VOLUME	382031.320	3861762.511	798.96
LOCATION	L0000331	VOLUME	382031.383	3861748.511	798.83
LOCATION		VOLUME		3861734.511	
LOCATION		VOLUME		3861720.511	

LOCATION		VOLUME		3861706.512	
LOCATION		VOLUME		3861692.512	
LOCATION		VOLUME		3861678.512	
LOCATION		VOLUME	382031.761	3861664.512	
LOCATION		VOLUME	382031.824	3861650.512	797.88
LOCATION		VOLUME	382031.887	3861636.512	
LOCATION		VOLUME	382031.951	3861622.512	
LOCATION		VOLUME		3861608.513	797.54
LOCATION		VOLUME	382032.077	3861594.513	797.43
LOCATION		VOLUME	382032.140	3861580.513	797.31
LOCATION		VOLUME		3861566.513	797.19
LOCATION		VOLUME	382031.809	3861552.522	797.07
LOCATION		VOLUME	382031.187	3861538.536	796.96
LOCATION		VOLUME		3861524.550	796.84
LOCATION		VOLUME		3861510.564	796.74
LOCATION		VOLUME			796.63
LOCATION		VOLUME	382028.701	3861482.591	796.52
LOCATION		VOLUME	382028.079	3861468.605	796.40
LOCATION		VOLUME	382027.457	3861454.619	796.26
LOCATION		VOLUME	382026.836	3861440.633	796.11
LOCATION		VOLUME	382026.214	3861426.647	795.96
LOCATION	L0000355	VOLUME	382025.593	3861412.660	795.83
LOCATION	L0000356	VOLUME	382024.971	3861398.674	795.70
LOCATION	L0000357	VOLUME	382024.349	3861384.688	795.58
LOCATION	L0000358	VOLUME	382023.728	3861370.702	795.46
LOCATION	L0000359	VOLUME	382023.106	3861356.716	795.30
LOCATION	L0000360	VOLUME	382022.485	3861342.729	795.15
LOCATION	L0000361	VOLUME	382021.863	3861328.743	794.94
LOCATION	L0000362	VOLUME	382021.241	3861314.757	794.73
LOCATION	L0000363	VOLUME	382020.620	3861300.771	794.78
LOCATION	L0000364	VOLUME	382019.998	3861286.785	794.88
LOCATION	L0000365	VOLUME	382019.377	3861272.798	795.16
LOCATION	L0000366	VOLUME	382018.755	3861258.812	795.55
LOCATION	L0000367	VOLUME	382018.133	3861244.826	795.94
LOCATION	L0000368	VOLUME	382017.512	3861230.840	796.32
LOCATION	L0000369	VOLUME	382016.890	3861216.854	796.68
LOCATION	L0000370	VOLUME	382016.269	3861202.867	796.95
LOCATION	L0000371	VOLUME	382015.647	3861188.881	797.22
LOCATION	L0000372	VOLUME	382012.908	3861175.308	797.31
LOCATION	L0000373	VOLUME	382008.226	3861162.114	797.31
LOCATION	L0000374	VOLUME	382003.545	3861148.920	797.29
LOCATION	L0000375	VOLUME	381998.863	3861135.726	797.24
LOCATION	L0000376	VOLUME	381994.181	3861122.532	797.16
LOCATION	L0000377	VOLUME	381989.500	3861109.338	797.01
LOCATION	L0000378	VOLUME	381984.818	3861096.144	796.85
LOCATION	L0000379	VOLUME	381980.136	3861082.950	796.74
LOCATION	L0000380	VOLUME	381975.454	3861069.756	796.61
LOCATION	L0000381	VOLUME	381970.773	3861056.562	796.36
LOCATION	L0000382	VOLUME		3861043.368	
LOCATION	L0000383	VOLUME		3861030.174	

LOCATION		1/01/11/45	204056 727	2064046 000	705 66
LOCATION		VOLUME		3861016.980	
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LOCATION	L0000398	VOLUME	381891.183	3860832.264	794.50
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LOCATION	L0000401	VOLUME	381877.138	3860792.683	793.45
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LOCATION	L0000405	VOLUME	381855.955	3860740.847	791.71
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	L0000407	VOLUME		3860714.956	791.14
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	L0000421 L0000422	VOLUME			785.52
	L0000422 L0000423				785.02
	L0000423	VOLUME			
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** End of LINE VOLUME Source ID = ONRD EX
** Line Source Represented by Adjacent Volume Sources
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** DESCRSRC Onroad Dust
** PREFIX
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** Configuration = Adjacent
** Emission Rate = 1.0
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	L0003668	VOLUME		3863542.012	
	L0003669	VOLUME		3863541.859	
	L0003670	VOLUME		3863541.706	827.12
LOCATION	L0003671	VOLUME	380707.856	3863541.553	826.90
LOCATION	L0003672	VOLUME	380721.855	3863541.399	826.68
LOCATION	L0003673	VOLUME	380735.854	3863541.246	826.47
	L0003674	VOLUME		3863541.093	826.31
LOCATION	L0003675	VOLUME	380763.853	3863540.939	826.17
LOCATION	L0003676	VOLUME	380777.852	3863540.786	826.05
LOCATION	L0003677	VOLUME	380791.851	3863540.633	825.92
LOCATION	L0003678	VOLUME	380805.850	3863540.480	825.78
LOCATION	L0003679	VOLUME	380819.849	3863540.326	825.63
LOCATION	L0003680	VOLUME	380833.848	3863540.173	825.46
LOCATION	L0003681	VOLUME	380847.848	3863540.020	825.29
LOCATION	L0003682	VOLUME	380861.847	3863539.867	825.10
LOCATION	L0003683	VOLUME	380875.846	3863539.713	824.95
LOCATION	L0003684	VOLUME	380889.845	3863539.560	824.81
LOCATION	L0003685	VOLUME	380903.844	3863539.407	824.70
LOCATION	L0003686	VOLUME	380917.843	3863539.253	824.60
LOCATION	L0003687	VOLUME	380931.843	3863539.100	824.50
LOCATION	L0003688	VOLUME	380945.842	3863538.947	824.39
LOCATION	L0003689	VOLUME	380959.841	3863538.794	824.27
LOCATION	L0003690	VOLUME	380973.840	3863538.640	824.14
LOCATION	L0003691	VOLUME	380987.839	3863538.487	824.01
LOCATION	L0003692	VOLUME	381001.838	3863538.334	823.89
LOCATION	L0003693	VOLUME	381015.838	3863538.180	823.77
LOCATION	L0003694	VOLUME	381029.837	3863538.027	823.68
LOCATION	L0003695	VOLUME	381043.836	3863537.874	823.59
LOCATION	L0003696	VOLUME	381057.835	3863537.721	823.47
LOCATION	L0003697	VOLUME	381071.834	3863537.567	823.35
LOCATION	L0003698	VOLUME	381085.833	3863537.414	823.31
LOCATION	L0003699	VOLUME	381099.832	3863537.261	823.30
LOCATION	L0003700	VOLUME	381113.832	3863537.108	823.36
LOCATION	L0003701	VOLUME		3863536.954	
LOCATION	L0003702	VOLUME		3863536.801	
LOCATION	L0003703	VOLUME	381155.829	3863536.648	823.49
LOCATION	L0003704	VOLUME	381169.828	3863536.494	823.50
	L0003705	VOLUME		3863536.341	
	L0003706	VOLUME		3863536.188	
	L0003707	VOLUME		3863535.991	
	L0003708	VOLUME		3863535.780	
	L0003709	VOLUME		3863535.569	
		·· -			·- -

LOCATION			204252 020	2062525 250	000 45
	L0003710	VOLUME		3863535.358	
	L0003711	VOLUME		3863535.147	
	L0003712	VOLUME		3863534.935	821.88
	L0003713	VOLUME		3863534.724	821.70
LOCATION	L0003714	VOLUME		3863534.513	821.53
LOCATION	L0003715	VOLUME		3863534.302	821.36
LOCATION	L0003716	VOLUME	381337.811	3863534.091	821.23
LOCATION	L0003717	VOLUME	381351.809	3863533.880	821.10
LOCATION	L0003718	VOLUME	381365.808	3863533.669	820.99
LOCATION	L0003719	VOLUME	381379.806	3863533.458	820.87
LOCATION	L0003720	VOLUME	381393.805	3863533.247	820.75
LOCATION	L0003721	VOLUME	381407.803	3863533.036	820.60
LOCATION	L0003722	VOLUME	381421.801	3863532.825	820.44
LOCATION	L0003723	VOLUME	381435.800	3863532.614	820.31
LOCATION	L0003724	VOLUME	381449.798	3863532.403	820.18
LOCATION	L0003725	VOLUME	381463.797	3863532.192	820.07
LOCATION	L0003726	VOLUME	381477.795	3863531.981	819.97
	L0003727	VOLUME	381491.793	3863531.770	819.88
LOCATION	L0003728	VOLUME	381505.792	3863531.559	819.80
LOCATION	L0003729	VOLUME	381519.790	3863531.348	819.73
LOCATION	L0003730	VOLUME	381533.789	3863531.137	819.66
LOCATION	L0003731	VOLUME	381547.787	3863530.926	819.60
	L0003732	VOLUME	381561.785	3863530.715	
	L0003732	VOLUME		3863530.504	
	L0003733	VOLUME			819.42
	L0003735	VOLUME	381603.781	3863530.082	819.36
	L0003735	VOLUME	381617.779	3863529.871	
	L0003737	VOLUME	381631.777	3863529.660	819.24
	L0003737	VOLUME		3863529.449	819.18
	L0003738	VOLUME		3863529.238	819.12
	L0003739	VOLUME		3863529.027	819.06
	L0003740 L0003741	VOLUME		3863528.816	819.00
LOCATION	L0003741 L0003742	VOLUME		3863528.605	818.96
	L0003742 L0003743	VOLUME	381701.770	3863528.394	
	L0003743 L0003744			3863528.182	
		VOLUME	55-7-577		0-0.0.
	L0003745	VOLUME		3863527.971	
	L0003746	VOLUME		3863527.760	
	L0003747	VOLUME		3863527.549	
	L0003748	VOLUME		3863527.338	
	L0003749	VOLUME		3863527.127	
	L0003750	VOLUME		3863526.916	
	L0003751	VOLUME		3863526.705	
	L0003752	VOLUME		3863526.494	
	L0003753	VOLUME		3863526.283	
	L0003754	VOLUME		3863526.072	
	L0003755	VOLUME		3863525.861	
	L0003756	VOLUME		3863525.650	
	L0003757	VOLUME		3863525.439	
LOCATION	L0003758	VOLUME	381925.744	3863525.228	818.06
LOCATION	L0003759	VOLUME	381939.742	3863525.017	817.95

LOCATION		VOLUME		3863524.806	
LOCATION		VOLUME		3863524.595	
	L0003762	VOLUME		3863524.384	
	L0003763	VOLUME	381995.736	3863524.173	817.48
	L0003764	VOLUME	382009.735	3863523.962	817.40
	L0003765	VOLUME	382023.733	3863523.751	
	L0003766	VOLUME		3863523.540	
	L0003767	VOLUME		3863512.426	
	L0003768	VOLUME		3863498.427	
	L0003769	VOLUME		3863484.428	
	L0003770	VOLUME		3863470.430	816.87
	L0003771	VOLUME	382039.833	3863456.431	816.72
	L0003772	VOLUME	382039.660	3863442.432	816.57
LOCATION	L0003773	VOLUME	382039.487	3863428.433	816.45
LOCATION	L0003774	VOLUME		3863414.434	816.33
LOCATION	L0003775	VOLUME	382039.142	3863400.435	816.21
LOCATION	L0003776	VOLUME	382038.969	3863386.436	816.07
LOCATION	L0003777	VOLUME	382038.796	3863372.437	815.93
LOCATION	L0003778	VOLUME	382038.623	3863358.438	815.78
LOCATION	L0003779	VOLUME	382038.450	3863344.439	815.63
LOCATION	L0003780	VOLUME	382038.277	3863330.440	815.48
LOCATION	L0003781	VOLUME	382038.105	3863316.441	815.33
LOCATION	L0003782	VOLUME	382037.932	3863302.442	815.17
LOCATION	L0003783	VOLUME	382037.759	3863288.443	815.01
LOCATION	L0003784	VOLUME	382037.586	3863274.444	814.86
LOCATION	L0003785	VOLUME	382037.413	3863260.446	814.71
LOCATION	L0003786	VOLUME	382037.241	3863246.447	814.57
LOCATION	L0003787	VOLUME	382037.068	3863232.448	814.42
LOCATION	L0003788	VOLUME	382036.895	3863218.449	814.28
LOCATION	L0003789	VOLUME	382036.722	3863204.450	814.11
LOCATION	L0003790	VOLUME	382036.549	3863190.451	813.95
LOCATION	L0003791	VOLUME	382036.376	3863176.452	813.82
LOCATION	L0003792	VOLUME	382036.204	3863162.453	813.68
LOCATION	L0003793	VOLUME	382036.031	3863148.454	813.54
LOCATION	L0003794	VOLUME	382035.858	3863134.455	813.40
LOCATION	L0003795	VOLUME	382035.685	3863120.456	813.24
LOCATION	L0003796	VOLUME	382035.512	3863106.457	813.08
LOCATION	L0003797	VOLUME	382035.339	3863092.458	812.90
LOCATION	L0003798	VOLUME	382035.167	3863078.459	812.69
LOCATION	L0003799	VOLUME	382034.994	3863064.460	812.48
LOCATION	L0003800	VOLUME	382034.821	3863050.462	812.27
LOCATION	L0003801	VOLUME	382034.648	3863036.463	812.06
LOCATION	L0003802	VOLUME	382034.475	3863022.464	811.87
LOCATION	L0003803	VOLUME	382034.302	3863008.465	811.69
LOCATION	L0003804	VOLUME	382034.130	3862994.466	811.52
	L0003805	VOLUME		3862980.467	
	L0003806	VOLUME		3862966.468	
	L0003807	VOLUME		3862952.469	
	L0003808	VOLUME		3862938.470	
	L0003809	VOLUME		3862924.471	
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LOCATION		\	202022 002	2062040 472	040 40
LOCATION		VOLUME		3862910.472	
LOCATION		VOLUME		3862896.473	
LOCATION		VOLUME		3862882.474	
	L0003813	VOLUME		3862868.475	810.05
	L0003814	VOLUME	382032.401	3862854.476	809.91
	L0003815	VOLUME	382032.229	3862840.478	809.78
	L0003816	VOLUME	382032.056	3862826.479	809.65
	L0003817	VOLUME	382031.883	3862812.480	809.53
LOCATION	L0003818	VOLUME	382031.710	3862798.481	809.41
LOCATION	L0003819	VOLUME	382031.537	3862784.482	809.28
LOCATION	L0003820	VOLUME	382031.364	3862770.483	809.15
LOCATION	L0003821	VOLUME	382031.192	3862756.484	809.02
LOCATION	L0003822	VOLUME	382031.019	3862742.485	808.91
LOCATION	L0003823	VOLUME	382030.846	3862728.486	808.79
LOCATION	L0003824	VOLUME	382030.673	3862714.487	808.65
LOCATION	L0003825	VOLUME	382030.500	3862700.488	808.52
LOCATION	L0003826	VOLUME	382030.327	3862686.489	808.36
LOCATION	L0003827	VOLUME	382030.155	3862672.490	808.19
LOCATION	L0003828	VOLUME	382029.982	3862658.491	808.02
LOCATION	L0003829	VOLUME	382029.809	3862644.492	807.85
LOCATION	L0003830	VOLUME	382029.636	3862630.494	807.67
LOCATION	L0003831	VOLUME	382029.463	3862616.495	807.49
LOCATION	L0003832	VOLUME	382029.291	3862602.496	807.33
LOCATION	L0003833	VOLUME	382029.118	3862588.497	807.18
LOCATION	L0003834	VOLUME	382028.945	3862574.498	807.03
	L0003835	VOLUME		3862560.499	806.86
	L0003836	VOLUME	382028.599	3862546.500	806.69
LOCATION		VOLUME	382028.426	3862532.501	
	L0003838	VOLUME		3862518.502	
	L0003839	VOLUME		3862504.503	806.19
	L0003840	VOLUME	382028.041	3862490.504	
	L0003841	VOLUME			805.88
	L0003842	VOLUME	382028.167	3862462.504	805.75
LOCATION		VOLUME		3862448.504	
LOCATION		VOLUME		3862434.504	
LOCATION		VOLUME	55-5-51-55	3862420.504	
LOCATION		VOLUME		3862406.505	
LOCATION		VOLUME		3862392.505	
LOCATION		VOLUME		3862378.505	
LOCATION		VOLUME		3862364.505	
LOCATION		VOLUME		3862350.505	
LOCATION		VOLUME		3862336.505	
LOCATION		VOLUME		3862322.505	
LOCATION		VOLUME		3862308.506	
LOCATION		VOLUME		3862294.506	
LOCATION				3862280.506	
LOCATION		VOLUME		3862266.506	
		VOLUME		3862252.506	
LOCATION		VOLUME			
LOCATION		VOLUME		3862238.506	
LOCATION	L0003859	VOLUME	382029.239	3862224.506	803.3/

	L0003860	VOLUME		3862210.507	
	L0003861	VOLUME		3862196.507	803.05
	L0003862	VOLUME	382029.428	3862182.507	802.90
	L0003863	VOLUME	382029.491	3862168.507	802.75
	L0003864	VOLUME	382029.554	3862154.507	802.60
	L0003865	VOLUME	382029.617	3862140.507	802.46
	L0003866	VOLUME	382029.680	3862126.507	802.32
	L0003867	VOLUME	382029.743	3862112.508	802.18
	L0003868	VOLUME	382029.806	3862098.508	802.05
	L0003869	VOLUME	382029.869	3862084.508	801.91
	L0003870	VOLUME	382029.933	3862070.508	801.78
	L0003871	VOLUME	382029.996	3862056.508	801.66
	L0003872	VOLUME	382030.059	3862042.508	801.55
	L0003873	VOLUME		3862028.508	801.44
	L0003874	VOLUME	382030.185	3862014.509	801.34
	L0003875	VOLUME	382030.248	3862000.509	801.23
	L0003876	VOLUME	382030.311	3861986.509	801.11
	L0003877	VOLUME	382030.374	3861972.509	800.99
	L0003878	VOLUME	382030.437	3861958.509	800.87
	L0003879	VOLUME	382030.500	3861944.509	800.76
	L0003880	VOLUME	382030.563	3861930.509	800.64
LOCATION	L0003881	VOLUME	382030.626	3861916.510	800.52
LOCATION	L0003882	VOLUME	382030.689	3861902.510	800.40
LOCATION	L0003883	VOLUME	382030.752	3861888.510	800.26
LOCATION	L0003884	VOLUME	382030.815	3861874.510	800.10
LOCATION	L0003885	VOLUME	382030.878	3861860.510	799.95
LOCATION	L0003886	VOLUME	382030.942	3861846.510	799.80
LOCATION	L0003887	VOLUME	382031.005	3861832.510	799.65
LOCATION	L0003888	VOLUME	382031.068	3861818.511	799.51
LOCATION	L0003889	VOLUME	382031.131	3861804.511	799.37
LOCATION	L0003890	VOLUME	382031.194	3861790.511	799.23
LOCATION	L0003891	VOLUME	382031.257	3861776.511	799.09
LOCATION	L0003892	VOLUME	382031.320	3861762.511	798.96
LOCATION	L0003893	VOLUME	382031.383	3861748.511	798.83
LOCATION	L0003894	VOLUME	382031.446	3861734.511	798.70
LOCATION	L0003895	VOLUME	382031.509	3861720.511	798.57
LOCATION	L0003896	VOLUME	382031.572	3861706.512	798.44
LOCATION	L0003897	VOLUME	382031.635	3861692.512	798.30
LOCATION	L0003898	VOLUME	382031.698	3861678.512	798.16
LOCATION	L0003899	VOLUME	382031.761	3861664.512	798.02
LOCATION	L0003900	VOLUME	382031.824	3861650.512	797.88
LOCATION	L0003901	VOLUME	382031.887	3861636.512	797.77
LOCATION	L0003902	VOLUME	382031.951	3861622.512	797.65
LOCATION	L0003903	VOLUME	382032.014	3861608.513	797.54
LOCATION	L0003904	VOLUME	382032.077	3861594.513	797.43
LOCATION	L0003905	VOLUME	382032.140	3861580.513	797.31
LOCATION	L0003906	VOLUME	382032.203	3861566.513	797.19
LOCATION	L0003907	VOLUME	382031.809	3861552.522	797.07
LOCATION	L0003908	VOLUME	382031.187	3861538.536	796.96
	L0003909	VOLUME		3861524.550	

LOCATION	L0003910	VOLUME	382029.944	3861510.564	796.74
LOCATION		VOLUME			796.63
LOCATION		VOLUME	382028.701	3861482.591	796.52
LOCATION		VOLUME	382028.079	3861468.605	796.40
LOCATION		VOLUME	382027.457	3861454.619	796.26
LOCATION		VOLUME	382026.836	3861440.633	796.11
LOCATION		VOLUME		3861426.647	795.96
LOCATION		VOLUME	382025.593	3861412.660	795.83
LOCATION		VOLUME	382024.971	3861398.674	795.70
LOCATION		VOLUME	382024.349	3861384.688	795.58
LOCATION		VOLUME	382023.728	3861370.702	795.46
LOCATION		VOLUME	382023.106	3861356.716	795.30
LOCATION		VOLUME	382022.485	3861342.729	795.15
LOCATION		VOLUME		3861328.743	794.94
LOCATION		VOLUME	382021.241	3861314.757	794.73
LOCATION		VOLUME	382020.620	3861300.771	794.78
LOCATION		VOLUME	382019.998	3861286.785	794.88
LOCATION		VOLUME	382019.377	3861272.798	795.16
LOCATION		VOLUME	382018.755	3861258.812	795.55
LOCATION		VOLUME	382018.133	3861244.826	795.94
	L0003930	VOLUME		3861230.840	796.32
LOCATION		VOLUME		3861216.854	796.68
LOCATION		VOLUME		3861202.867	796.95
LOCATION		VOLUME	382015.647	3861188.881	797.22
LOCATION		VOLUME		3861175.308	797.31
LOCATION		VOLUME	382008.226	3861162.114	
	L0003936	VOLUME	382003.545		797.29
LOCATION		VOLUME	381998.863	3861135.726	
LOCATION		VOLUME	381994.181	3861122.532	
	L0003939	VOLUME	381989.500		797.01
LOCATION	L0003940	VOLUME	381984.818	3861096.144	796.85
LOCATION	L0003941	VOLUME	381980.136	3861082.950	796.74
	L0003942	VOLUME		3861069.756	796.61
LOCATION		VOLUME		3861056.562	
	L0003944	VOLUME		3861043.368	
	L0003945	VOLUME		3861030.174	
	L0003946	VOLUME		3861016.980	
	L0003947	VOLUME		3861003.786	
	L0003948	VOLUME		3860990.592	
	L0003949	VOLUME		3860977.398	
	L0003950	VOLUME		3860964.204	
	L0003951	VOLUME		3860951.010	
	L0003952	VOLUME		3860937.816	
	L0003953	VOLUME		3860924.622	
	L0003954	VOLUME		3860911.428	
	L0003955	VOLUME		3860898.234	
	L0003956	VOLUME		3860885.040	
	L0003957	VOLUME		3860871.846	
	L0003958	VOLUME		3860858.652	
LOCATION	L0003959	VOLUME	381895.865	3860845.458	794.72

LOCATION	L0003960	VOLUME	381891.183	3860832.264	794.50
LOCATION	L0003961	VOLUME	381886.501		794.35
LOCATION		VOLUME	381881.820	3860805.877	793.92
LOCATION		VOLUME	381877.138	3860792.683	793.45
LOCATION		VOLUME	381871.946	3860779.684	793.00
LOCATION		VOLUME	381866.616	3860766.738	792.50
LOCATION		VOLUME	381861.285	3860753.793	792.07
LOCATION	L0003967	VOLUME	381855.955	3860740.847	791.71
LOCATION		VOLUME	381850.624	3860727.902	791.34
LOCATION		VOLUME	381845.294	3860714.956	791.14
LOCATION		VOLUME	381839.963	3860702.011	790.94
LOCATION		VOLUME	381834.633	3860689.065	790.63
LOCATION		VOLUME	381829.302	3860676.120	790.28
LOCATION		VOLUME	381823.972	3860663.174	789.93
LOCATION		VOLUME	381818.641	3860650.229	789.56
LOCATION		VOLUME	381813.311	3860637.283	789.23
LOCATION		VOLUME	381807.980	3860624.338	788.95
LOCATION	L0003977	VOLUME	381802.650	3860611.392	788.72
LOCATION	L0003978	VOLUME	381797.319	3860598.447	788.33
LOCATION		VOLUME	381791.989	3860585.501	787.79
LOCATION		VOLUME	381787.269	3860572.397	787.25
LOCATION	L0003981	VOLUME	381785.600	3860558.497	786.87
LOCATION	L0003982	VOLUME	381783.932	3860544.596	786.49
LOCATION	L0003983	VOLUME	381782.264	3860530.696	786.01
LOCATION	L0003984	VOLUME	381780.596	3860516.796	785.52
LOCATION	L0003985	VOLUME	381778.928	3860502.895	785.02
LOCATION	L0003986	VOLUME	381777.260	3860488.995	784.54
LOCATION	L0003987	VOLUME	381775.592	3860475.095	784.10
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	L0000133	0.0017921147	3.40	6.51	3.16
	L0000140	0.0017921147	3.40	6.51	3.16
	L0000141	0.0017921147	3.40	6.51	3.16
	L0000142	0.0017921147	3.40	6.51	3.16
	L0000143	0.0017921147	3.40	6.51	3.16
	L0000144 L0000145	0.0017921147	3.40	6.51	3.16
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	L0000147	0.0017921147	3.40	6.51	3.16
	L0000147 L0000148	0.0017921147	3.40	6.51	3.16
	L0000148	0.0017921147		6.51	3.16
	L0000149	0.0017921147	3.40		
	L0000150	0.0017921147	3.40 3.40	6.51 6.51	3.16
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	L0000132 L0000153	0.0017921147		6.51	3.16
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SRCPARAM	L0000164	0.0017921147	3.40	6.51	3.16

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SRCPARAM	L0000171	0.0017921147	3.40	6.51	3.16
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	L0000212 L0000213	0.0017921147	3.40	6.51	3.16
	L0000213	0.0017921147	3.40	6.51	3.16
JINCE ANAPI	L0000214	0.001/72114/	J.∓€	0.71	٥.١٥

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SRCPARAM	L0000230	0.0017921147	3.40	6.51	3.16
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	L0000244 L0000245	0.0017921147	3.40	6.51	3.16
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	L0000247	0.0017921147	3.40	6.51	3.16
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			3.40		
	L0000250 L0000251	0.0017921147 0.0017921147	3.40 3.40	6.51 6.51	3.16
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		0.0017921147 0.0017921147			3.16
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	L0000312 L0000313	0.0017921147	3.40	6.51	3.16
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JINCFARAM	L0000314	0.001/32114/	2.40	0.71	3.10

SRCPARAM	L0000315	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000320	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000321	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000322	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000326	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000327	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000328	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000329	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000330	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000331	0.0017921147	3.40	6.51	3.16
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JINCFARAM	L0000304	0.001/32114/	J.40	0.51	3.10

SRCPARAM	L0000365	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000367	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000368	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000369	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000370	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000376	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000378	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000379	0.0017921147	3.40	6.51	3.16
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	L0000403	0.0017921147	3.40	6.51	3.16
	L0000410 L0000411	0.0017921147	3.40	6.51	3.16
	L0000411 L0000412	0.0017921147	3.40	6.51	3.16
	L0000412 L0000413	0.0017921147	3.40	6.51	3.16
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JINCFARAM	F0000414	0.001/32114/	J.40	0.51	3.10

SRCPARAM	L0000415	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000417	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000418	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000429	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000433	0.0017921147	3.40	6.51	3.16
SRCPARAM	L0000434	0.0017921147	3.40	6.51	3.16
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	L0000464	0.0017921147	3.40	6.51	3.16
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SRCPARAM	L0000465	0.0017921147	3.40	6.51	3.16
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	L0004038	0.0017921147	0.85	6.51	0.79
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	L0004042	0.0017921147	0.85	6.51	0.79
	L0004043	0.0017921147	0.85	6.51	0.79
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JINCFARAM	L0004000	0.001/32114/	0.00	0.71	0.73

SRCPARAM	L0004067	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0004068	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0004069	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0004070	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0004071	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0004072	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0004073	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0004074	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0004075	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0004076	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0004077	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0004078	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0004079	0.0017921147	0.85	6.51	0.79
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SRCPARAM	L0004081	0.0017921147	0.85	6.51	0.79
SRCPARAM	L0004082	0.0017921147	0.85	6.51	0.79
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	L0004108	0.0017921147	0.85	6.51	0.79
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	L0004111 L0004112	0.0017921147	0.85	6.51	0.79
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	L0004113	0.0017921147	0.85	6.51	0.79
	L0004114 L0004115	0.0017921147	0.85	6.51	0.79
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JINCFARAM	F0004110	0.001/32114/	6.67	0.31	0.73

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  SRCPARAM L0004118
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                                                     6.51
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  SRCPARAM L0004119
                         0.0017921147
  SRCPARAM L0004120
                         0.0017921147
                                           0.85
                                                     6.51
                                                               0.79
** Variable Emissions Type: "By Hour / Day (HRDOW)"
** Variable Emission Scenario: "Construction"
** WeekDays:
  EMISFACT CSTN EX
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
  EMISFACT CSTN EX
                         HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
                         HRDOW 1.0 1.0 1.0 0.0 0.0 0.0
  EMISFACT CSTN_EX
   EMISFACT CSTN EX
                        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Saturday:
   EMISFACT CSTN_EX
                        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN EX
   EMISFACT CSTN EX
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN_EX
** Sunday:
   EMISFACT CSTN_EX
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN_EX
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN EX
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN_EX
** WeekDays:
   EMISFACT CSTN DST
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN DST
                         HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT CSTN_DST
                         HRDOW 1.0 1.0 1.0 0.0 0.0 0.0
   EMISFACT CSTN DST
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Saturday:
   EMISFACT CSTN_DST
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN DST
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN_DST
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN_DST
** Sunday:
   EMISFACT CSTN DST
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN_DST
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CSTN DST
                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
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   EMISFACT CSTN DST
** WeekDays:
   EMISFACT L0000001
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   EMISFACT L0000001
                         HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT L0000001
                         HRDOW 1.0 1.0 1.0 0.0 0.0 0.0
   EMISFACT L0000001
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                         HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT L0000002
   EMISFACT L0000002
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   EMISFACT L0000002
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SRCGROUP CSTN EX CSTN EX
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SRCGROUP ONRD DST L0003569 L0003570 L0003571 L0003572 L0003573 L0003574
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SRCGROUP ONRD_DST L0003581 L0003582 L0003583 L0003584 L0003585 L0003586
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** AERMOD Meteorology Pathway
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  PROFFILE AERMET\722953.PFL
  SURFDATA 3183 2009 MOJAVE Airpot
  UAIRDATA 93214 2009
  PROFBASE 849.5 METERS
ME FINISHED
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** AERMOD Output Pathway
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  RECTABLE 24 1ST
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  PLOTFILE 24 CSTN EX 1ST "BULLHEAD SOLAR PM25.AD\24H1G002.PLT" 33
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  PLOTFILE 24 ONRD_EX 1ST "BULLHEAD SOLAR PM25.AD\24H1G004.PLT" 35
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  PLOTFILE PERIOD CSTN_DST "BULLHEAD SOLAR PM25.AD\PE00G001.PLT" 37
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** DESCPTN UTM: Universal Transverse Mercator
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           North American Datum 1983
** DTMRGN
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Appendix D

Cumulative Projects List and Map

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County of Kern

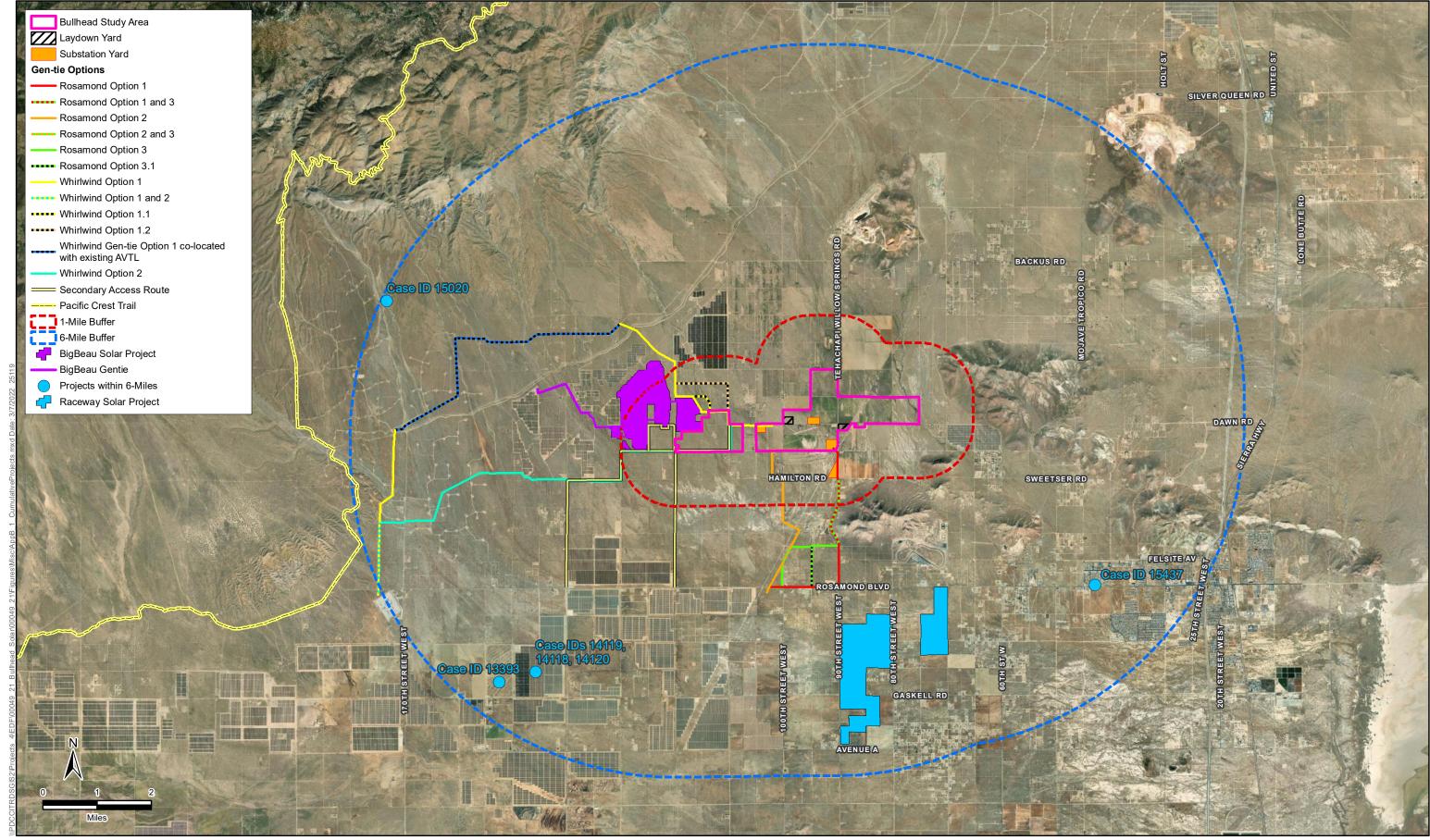
Table D-1. Cumulative Projects List

Distance from Bullhead Solar	CaseID/	Applicant/Project				Project				
(Within)	Map ID	Name	Project Location	Project Description	Case Type	Site APN	Project Phase/Schedule	Acreage/ SF	Project Status	MW
1-Mile	-	EDFR/Big Beau Solar Project	North of Ave. to the Stars, South of 125 th /Champagne Ave, East of 135 th W., West of 105 th St W.	128 MW AC photovoltaic solar and associated infrastructure, Gen-Tie Line, and 60 MW Battery Energy Storage System	ZCC, CUPs	Multiple	Under construction (10-14 months. Will be in full operation by time Bullhead is under construction in 2024.	2,285 acres	Approved Construction Phase	128
6-Miles	15020	Aurora Solar, LLC/Camino Solar Project	N. 175th St West. (Manzana Wind)	CUP for proposed 44 MW Solar Facility on public & private land	CUP	476-052- 097	Construction is anticipated to start in early 2022. Construction would be complete before Bullhead is under construction.	339 acres	Approved	44
6-Miles	15437	Investment Concepts	NE corner of Rosamond and Sedona	A CUP to construct an 18-unit apartment complex in a C-1 zone.	CUP	252-161- 492	Construction phase not available; assumed overlap with Bullhead construction.	18 units	Approved	NA
6-Miles	14119, 14118, 14120	SGS Antelope Valley Development /Rosamond Solar Modification Project	East side of 150th Street W, approximately 1/2 mile south of Rosamond Boulevard and 1/2 mile north of Avenue A in the Rosamond area.	Addition of 100 MW of solar power on 400 adjacent acres to original project.	SPA, ZCC, CUP Mod	Multiple	Construction phase not available; assumed overlap with Bullhead construction.	1,360 acres	Approved	100
6-Miles	13393	Renewable Resources Group Holdings/Antelope Valley Solar Project	North of Avenue A, south of Holiday Avenue, east of 185th Street West, west of 150th Street West, approximately nine miles west of Rosamond	650 MW photovoltaic solar electrical generating facility on 4,782 acres (462 MW on 3,544 acres in Kern County and 188 MW on 1,238 acres in LA County).	ZCC, CUP Mods	Multiple	Phased construction over 36 months. Construction phase not available. Assumed overlap with Bullhead Construction.	1,836 acres	TBD	650
6-Miles		Raceway Solar	Between Rosamond Blvd. and Avenue A and between 70th Street W and 90th Street W.	Two solar photovoltaic projects on six sites totaling 1,330 acres, with 291 MW of electricity and 291 MWh energy storage.	SPA, ZCC, CUPs	Multiple	Construction underway. Will be completed by 2023; project will not overlap with Bullhead Solar construction.	1,330 acres	Approved	291

County of Kern

Table D-2. Cumulative Projects Considered but Eliminated from Analysis

Distance from Bullhead Solar (Within)	Applicant/Project Name (Permit or ID)	Project Type and Location	Reason for Removal
1-Mile	Sagebrush Solar Storage Project (PLN21-00014)	Solar Project. North of Champagne Avenue and west of Tehachapi Willow Springs Road.	Project was previously approved but never developed and application was withdrawn. Lands expected to remain as open space; future undetermined.
1-Mile	IP Solar Company	Solar; Southeast Corner of McConnell & 105th. (Sec 36 APN 474-120-04)	Project was previously approved but not expected to be developed with Solar. Future undetermined.
6-Miles	Troncale, Craig and Leslie (ID 12567)	Dog Kennel. 7980 Birch	5.5 miles from project perimeter; cumulative noise effects not anticipated.
6-Miles	Holliday Rock Co, Inc (ID 12596)	Modification of existing mine boundary, no development proposed. NW corner Trotter Rd & 70 th St W (APN 346-010-01)	4.0 miles from project perimeter; site boundary change but no improvements proposed to evaluate.
6-Miles	Seaneen McCardle (ID 14182)	Mobile home. North of Avenue A and west of 90 th Street West.	Single mobile home approximately 5.5 miles from project perimeter; no cumulative effect anticipated.
6-Miles	AT&T by Vance Pomeroy (ID 15174)	Proposed 68'-6" tall monopine wireless communication facility with associated equipment shelter. Gibbs Ave at Joshua Ln., Rosamond	2.2 miles from project perimeter and 3.8 miles from nearest Bullhead Solar Gen-tie option. Cumulative visual effect not anticipated due to type of project and distance from project.
6-Miles	AT&T by Vance Pomeroy (ID 15189)	Proposed 70'-tall monopine wireless communication facility with associated equipment shelter. Sweetser Rd at Tobacco Rd, Rosamond	3.0 miles from project perimeter and 4.2 miles from nearest Bullhead Solar Gen-tie option. Cumulative visual effect not anticipated due to type of project and distance from project.
6-Miles	Kenneth Paul & Sandra Susan Gabbani (ID 15204)	Dog training facility. 2163 Harris Avenue, Rosamond	4.0 miles from project perimeter. No cumulative effects due to distance and type of project.
6-Miles	Greg Scilley by Cornerstone Inc. (ID 15259)	Zone change, OS to M-1 PD to allow for a contractors storage yard. Southwest corner of 75th Street West (APN 252-142-20)	Zone change approved. Removed from cumulative list due to distance and nature of project. No cumulative effects anticipated.
6-Miles	AT&T Mobility c/o Eukon Group (ID15312)	CUP for a new wireless telecom facility. AT&T Mobility c/o Eukon Group	3.6 miles from project perimeter. No cumulative effects due to distance and type of project.
6-Miles	Jose Joaquin Panchame (ID15319)	Single Mobile Home. E of Linda Ln & W of Willow Avenue	4.2 miles from project perimeter. No cumulative effects due to distance and type of project.
6-Miles	Don Illic (ID15344)	Extension of time on a CUP; no project/development. 9201 West Avenue A, Rosamond	Removed due to nature of project; no development.
6-Miles	Tim Jones (ID 15386)	Single Mobile Home. 4766 - 45th Street West, Rosamond	Removed due to nature of project.
6-Miles	Suzanne Poth (ID15437)	CUP for kennel to house 75 dogs. 8440 Woodland Lane, Mojave	2.1 miles from project perimeter; cumulative noise effects not anticipated.
6-Miles	ENXCO DEVELOPMENT CORPORATION/Avalon Wind Farm (ID 13585)	Addendum to previously approved wind energy project (235 MW). North of Backus Road and east and west of Tehachapi-Willow Springs Road.	Removed from cumulative analysis; project not anticipated to be constructed.





Appendix D.2: **Decommissioning Emissions Memo**

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October 10, 2023

Terrance Smalls
Kern County Planning and Natural Resources Department
County of Kern Public Services Building
2700 "M" Street, Suite 100, Bakersfield, CA 93301-2370

Subject: Air Quality and Greenhouse Gas Emissions Assessment for the Decommissioning of the Bullhead Solar Project

Mr. Kuhlke:

ICF has prepared this memorandum to assess the emissions of criteria air pollutants and greenhouse gases associated with the decommissioning of the Bullhead Solar Project (Project). The analyses contained herein are based on the Air Quality and Greenhouse Gas Technical Report (AQTR) prepared by ICF, which evaluated the construction and operational emissions of the Project (ICF, April 2023). This memorandum quantifies Project decommissioning emissions and evaluates potential impacts.

Decommissioning Emissions Assessment

Air pollutant emissions would be generated during Project decommissioning due to equipment operations and restoration activities. Decommissioning activities are expected to commence approximately 35 years after the start of the Project's operational period. Decommissioning would require similar equipment as Project construction; therefore, it is reasonable to assume that decommissioning activities would be similar in nature to activities associated with construction. The decommissioning period is projected to be shorter in duration than construction and take approximately 6 months to complete, compared to the construction duration of 18 months. Therefore, decommissioning emissions are assumed to equal one-third of the construction emissions provided in the AQTR. This assumption does not consider future improvements in technology that would reduce air pollutant emissions.

Table 1, below, provides the unmitigated decommissioning emissions which are equal to one-third of the unmitigated construction emissions provided in Table 2-8 of the AQTR. Table 2, below, provides the mitigated decommissioning emissions which are equal to one-third of the mitigated construction emissions provided in Table 2-9 of the AQTR. The mitigation measures selected for the Project include the implementation of diesel emission-reduction measures and a fugitive dust control plan. These mitigation measures are discussed in detail in the AQTR, Section 2.3.3 *Project Impacts*.



Table 1. Estimated Decommissioning-Related Criteria Air Pollutant Emissions – Unmitigated

	Annual Criteria Pollutant Emissions (tons per year)									
Phase	ROG	NOx	СО	PM ₁₀ Exhaust	PM ₁₀ Dust	PM ₁₀ Total	PM _{2.5} Exhaust	PM _{2.5} Dust	PM _{2.5} Total	SO_2
Move On	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Site Preparation and Grading	<1	2	2	<1	1	1	<1	<1	<1	<1
New Access Road Construction	<1	1	1	<1	<1	<1	<1	<1	<1	<1
Internal Roads Construction	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Solar Array Structural, Underground and Panel, and Battery Installation	2	13	12	1	20	21	1	2	3	<1
Electrical Substation and Microwave Tower Construction	<1	<1	1	<1	<1	<1	<1	<1	<1	<1
Gen-tie Line Construction	<1	1	1	<1	<1	<1	<1	<1	<1	<1
Annual Emissions	2	18	16	1	21	22	1	3	4	<1
EKAPCD Thresholds	25	25	NT	NT	NT	15	NT	NT	NT	27
Exceed Threshold?	No	No	_	-	_	Yes	-	_	-	No

 $EKAPCD = Eastern Kern Air Pollution Control District; NO_X = nitrous oxides; NT = No threshold has been established by EKAPCD; PM_{2.5} = particles with an aerodynamic diameter of 2.5 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; ROG = reactive organic gases; SO_2 = sulfur dioxide$



Table 2. Estimated Decommissioning-related Criteria Air Pollutant Emissions – Mitigated with Tier 3 and Fugitive Dust Control

	Annual Criteria Pollutant Emissions (tons per year)									
Phase	ROG	NOx	СО	PM ₁₀ Exhaust	PM ₁₀ Dust	PM ₁₀ Total	PM _{2.5} Exhaust	PM _{2.5} Dust	PM _{2.5} Total	SO ₂
Move On	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Site Preparation and Grading	<1	2	2	<1	<1	<1	<1	<1	<1	<1
Access Road Improvements	<1	1	1	<1	<1	<1	<1	<1	<1	<1
Internal Roads Construction	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Solar Array Structural, Underground and Panel, and Battery Installation	1	10	12	<1	8	8	<1	1	1	<1
Electrical Substation and Microwave Tower Construction	<1	<1	1	<1	<1	<1	<1	<1	<1	<1
Generation Tie Line Construction	<1	1	1	<1	<1	<1	<1	<1	<1	<1
Annual Emissions	1	14	17	<1	8	8	<1	1	1	<1
EKAPCD Thresholds	25	25	NT	NT	NT	15	NT	NT	NT	27
Exceed Threshold?	No	No	_	_	_	No	_	_	_	No

EKAPCD = Eastern Kern Air Pollution Control District; NO_X = nitrous oxides; NT = No threshold has been established by EKAPCD; $PM_{2.5}$ = particles with an aerodynamic diameter of 2.5 micrometers or less; PM_{10} = particles with an aerodynamic diameter of 10 micrometers or less; ROG = reactive organic gases; SO_2 = sulfur dioxide.



The unmitigated decommissioning emissions provided in Table 1 show that prior to mitigation, decommissioning activities would result in significant air quality impacts due to PM₁₀ emissions exceeding the applicable Eastern Kern Air Pollution Control District (EKAPCD) significance threshold of 15 tons per year. However, as shown in Table 2, implementation of mitigation measures would reduce decommissioning emissions below all applicable EKAPCD significance thresholds for criteria air pollutants.

It should also be noted that decommissioning emissions are conservatively assumed to have equal impacts to health risks and local particulate matter concentrations as construction emissions. As detailed in Table 2-14 and Table 2-15 of the AQTR, the estimated health risks and particulate matter concentrations do not exceed applicable thresholds during construction. As such, decommissioning emissions would not be expected to have a significant impact on health risks or particulate matter concentrations.

This assessment further assumes decommissioning activities would generate greenhouse gas (GHG) emissions at a rate equal to one-third of the GHG emissions generated during construction. As such, decommissioning activities would generate approximately 5,387 metric tons of carbon dioxide equivalents (MTCO $_2$ e) during the decommissioning period. By combining the GHG emissions generated during decommissioning with the GHG emissions generated during construction and operation, which are provided in Table 3-5 of the AQTR, the net GHG emissions of the Project would increase from -1,052,986 MTCO $_2$ e to -1,047,599 MTCO $_2$ e. Therefore, inclusion of the decommissioning emissions would not change the impact determination of GHGs, and Project impacts would remain less than significant.



References

ICF. 2023. Air Quality and Greenhouse Gas Technical Report – Bullhead Solar Project. April.