



APPLICATIONS:

APPEAL APPLICATION

Instructions and Checklist

Related Code Section: Refer to the City Planning case determination to identify the Zone Code section for the entitlement and the appeal procedure.

Purpose: This application is for the appeal of Department of City Planning determinations authorized by the Los Angeles Municipal Code (LAMC).

A. APPELLATE BODY/CASE INFORMATION

1. APPELLATE BODY

- Area Planning Commission City Planning Commission City Council Director of Planning
- Zoning Administrator

Regarding Case Number: _____

Project Address: _____

Final Date to Appeal: _____

2. APPELLANT

Appellant Identity:
(check all that apply)

- Representative Property Owner
- Applicant Operator of the Use/Site
- Person, other than the Applicant, Owner or Operator claiming to be aggrieved

Person affected by the determination made by the **Department of Building and Safety**

- Representative Owner Aggrieved Party
- Applicant Operator

3. APPELLANT INFORMATION

Appellant's Name: _____

Company/Organization: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____ E-mail: _____

a. Is the appeal being filed on your behalf or on behalf of another party, organization or company?

- Self Other: _____

b. Is the appeal being filed to support the original applicant's position? Yes No

4. REPRESENTATIVE/AGENT INFORMATION

Representative/Agent name (if applicable): _____

Company: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone: _____ E-mail: _____

5. JUSTIFICATION/REASON FOR APPEAL

a. Is the entire decision, or only parts of it being appealed? Entire Part

b. Are specific conditions of approval being appealed? Yes No

If Yes, list the condition number(s) here: _____

Attach a separate sheet providing your reasons for the appeal. Your reason must state:

- The reason for the appeal
- How you are aggrieved by the decision
- Specifically the points at issue
- Why you believe the decision-maker erred or abused their discretion

6. APPLICANT'S AFFIDAVIT

I certify that the statements contained in this application are complete and true:

Appellant Signature: *Victoria Grant* Date: June 21, 2022

GENERAL APPEAL FILING REQUIREMENTS

B. ALL CASES REQUIRE THE FOLLOWING ITEMS - SEE THE ADDITIONAL INSTRUCTIONS FOR SPECIFIC CASE TYPES

1. Appeal Documents

a. **Three (3) sets** - The following documents are required for each appeal filed (1 original and 2 duplicates) Each case being appealed is required to provide three (3) sets of the listed documents.

- Appeal Application (form CP-7769)
- Justification/Reason for Appeal
- Copies of Original Determination Letter

b. Electronic Copy

Provide an electronic copy of your appeal documents on a flash drive (planning staff will upload materials during filing and return the flash drive to you) or a CD (which will remain in the file). The following items must be saved as individual PDFs and labeled accordingly (e.g. "Appeal Form.pdf", "Justification/Reason Statement.pdf", or "Original Determination Letter.pdf" etc.). No file should exceed 9.8 MB in size.

c. Appeal Fee

- Original Applicant - A fee equal to 85% of the original application fee, provide a copy of the original application receipt(s) to calculate the fee per LAMC Section 19.01B 1.
- Aggrieved Party - The fee charged shall be in accordance with the LAMC Section 19.01B 1.

d. Notice Requirement

- Mailing List - All appeals require noticing per the applicable LAMC section(s). Original Applicants must provide noticing per the LAMC
- Mailing Fee - The appeal notice mailing fee is paid by the project applicant, payment is made to the City Planning's mailing contractor (BTC), a copy of the receipt must be submitted as proof of payment.

SPECIFIC CASE TYPES - APPEAL FILING INFORMATION

C. DENSITY BONUS / TRANSIT ORIENTED COMMUNITES (TOC)

1. Density Bonus/TOC

Appeal procedures for Density Bonus/TOC per LAMC Section 12.22.A 25 (g) f.

NOTE:

- Density Bonus/TOC cases, only the *on menu or additional incentives* items can be appealed.
- Appeals of Density Bonus/TOC cases can only be filed by adjacent owners or tenants (must have documentation), and always only appealable to the Citywide Planning Commission.

- Provide documentation to confirm adjacent owner or tenant status, i.e., a lease agreement, rent receipt, utility bill, property tax bill, ZIMAS, drivers license, bill statement etc.

D. WAIVER OF DEDICATION AND OR IMPROVEMENT

Appeal procedure for Waiver of Dedication or Improvement per LAMC Section 12.37 I.

NOTE:

- Waivers for By-Right Projects, can only be appealed by the owner.
- When a Waiver is on appeal and is part of a master land use application request or subdivider's statement for a project, the applicant may appeal pursuant to the procedures that governs the entitlement.

E. TENTATIVE TRACT/VESTING

1. Tentative Tract/Vesting - Appeal procedure for Tentative Tract / Vesting application per LAMC Section 17.54 A.

NOTE: Appeals to the City Council from a determination on a Tentative Tract (TT or VTT) by the Area or City Planning Commission must be filed within 10 days of the date of the written determination of said Commission.

- Provide a copy of the written determination letter from Commission.

F. BUILDING AND SAFETY DETERMINATION

- 1.** Appeal of the *Department of Building and Safety* determination, per LAMC 12.26 K 1, an appellant is considered the **Original Applicant** and must provide noticing and pay mailing fees.

a. Appeal Fee

- Original Applicant - The fee charged shall be in accordance with LAMC Section 19.01B 2, as stated in the Building and Safety determination letter, plus all surcharges. (the fee specified in Table 4-A, Section 98.0403.2 of the City of Los Angeles Building Code)

b. Notice Requirement

- Mailing Fee - The applicant must pay mailing fees to City Planning's mailing contractor (BTC) and submit a copy of receipt as proof of payment.

- 2.** Appeal of the *Director of City Planning* determination per LAMC Section 12.26 K 6, an applicant or any other aggrieved person may file an appeal, and is appealable to the Area Planning Commission or Citywide Planning Commission as noted in the determination.

a. Appeal Fee

- Original Applicant - The fee charged shall be in accordance with the LAMC Section 19.01 B 1 a.

b. Notice Requirement

- Mailing List - The appeal notification requirements per LAMC Section 12.26 K 7 apply.
- Mailing Fees - The appeal notice mailing fee is made to City Planning's mailing contractor (BTC), a copy of receipt must be submitted as proof of payment.

G. NUISANCE ABATEMENT

1. Nuisance Abatement - Appeal procedure for Nuisance Abatement per LAMC Section 12.27.1 C 4

NOTE:

- Nuisance Abatement is only appealable to the City Council.

a. Appeal Fee

Aggrieved Party the fee charged shall be in accordance with the LAMC Section 19.01 B 1.

2. Plan Approval/Compliance Review

Appeal procedure for Nuisance Abatement Plan Approval/Compliance Review per LAMC Section 12.27.1 C 4.

a. Appeal Fee

Compliance Review - The fee charged shall be in accordance with the LAMC Section 19.01 B.

Modification - The fee shall be in accordance with the LAMC Section 19.01 B.

NOTES

A Certified Neighborhood Council (CNC) or a person identified as a member of a CNC or as representing the CNC may not file an appeal on behalf of the Neighborhood Council; persons affiliated with a CNC may only file as an individual on behalf of self.

Please note that the appellate body must act on your appeal within a time period specified in the Section(s) of the Los Angeles Municipal Code (LAMC) pertaining to the type of appeal being filed. The Department of City Planning will make its best efforts to have appeals scheduled prior to the appellate body's last day to act in order to provide due process to the appellant. If the appellate body is unable to come to a consensus or is unable to hear and consider the appeal prior to the last day to act, the appeal is automatically deemed denied, and the original decision will stand. The last day to act as defined in the LAMC may only be extended if formally agreed upon by the applicant.

This Section for City Planning Staff Use Only		
Base Fee:	Reviewed & Accepted by (DSC Planner):	Date:
Receipt No:	Deemed Complete by (Project Planner):	Date:
<input type="checkbox"/> Determination authority notified		<input type="checkbox"/> Original receipt and BTC receipt (if original applicant)

Justification/Reason for Appeal

6007 West Sunset Boulevard Project

CPC-2021-1557-DB-SPR-HCA; ENV-2021-1558-CE

I. REASON FOR THE APPEAL

The Categorical Exemption prepared for 6007 West Sunset Boulevard Project (CPC-2021-1557-DB-SPR-HCA; ENV-2021-1558-CE) (“Project”) fails to comply with the California Environmental Quality Act (“CEQA”). Furthermore, the approval of the Site Plan Review entitlements (CPC-2021-1557-DB-SPR-HCA) was in error because (1) the City of Los Angeles (“City”) must fully comply with CEQA prior to any approvals in furtherance of the Project and (2) the findings are not supported by substantial evidence. Therefore, the City of Los Angeles (“City”) must set aside the Site Plan Review entitlements and prepare circulate an EIR prior to considering approvals for the Project.

II. SPECIFICALLY THE POINTS AT ISSUE

The specific points at issue are set forth in the attached comment letters dated October 19, 2021 and May 11, 2022. The Project does not qualify for a categorical exemption pursuant to Section 15332 of the CEQA Guidelines (“Infill Exemption”). Furthermore, proper CEQA review must be complete *before* the City approves the Project’s entitlements. (*Orinda Ass’n. v. Bd. of Supervisors* (1986) 182 Cal.App.3d 1145, 1171 [“No agency may approve a project subject to CEQA until the entire CEQA process is completed and the overall project is lawfully approved.”].) As such, the approval of the Project’s Site Plan Review entitlements was in error. Additionally, by failing to properly conduct environmental review under CEQA, the City lacks substantial evidence to support its findings for the Site Plan Review entitlements.

III. HOW YOU ARE AGGRIEVED BY THE DECISION

Members of appellant Supporters Alliance for Environmental Responsibility (“SAFER”) live and/or work in the vicinity of the proposed Project. They breathe the air, suffer traffic congestion, and will suffer other environmental impacts of the Project unless it is properly mitigated.

IV. WHY YOU BELIEVE THE DECISION-MAKER ERRED OR ABUSED THEIR DISCRETION

The City Planning Commission approved the Site Plan Review and approved a Categorical Exemption for the project pursuant to Section 15332 of the CEQA Guidelines, despite a lack of substantial evidence in the record that the Project met the requirements for the Infill Exemption. Rather than exempt the Project from CEQA, the City should have prepared an initial study followed by an EIR or negative declaration in accordance with CEQA prior to consideration of approvals for the Project. The City is not permitted to approve the Project’s entitlements until proper CEQA review has been completed.



T 510.836.4200
F 510.836.4205

1939 Harrison Street, Ste. 150
Oakland, CA 94612

www.lozeaudrury.com
victoria@lozeaudrury.com

Submission Via Email

Michelle Carter, City Planning Associate
200 North Spring Street, Room #763
Los Angeles, CA 90012
michelle.carter@lacity.org

Department of City Planning
City of Los Angeles
200 North Spring Street
Los Angeles, CA 90012
per.planning@lacity.org

October 19, 2021

**Re: Comment on the California Environmental Quality Act Class 32
Categorical Exemption for the 6007 West Sunset Boulevard Project
(CPC-2021-1557-DB-SPR-HCA; ENV-2021-1558-CE)**

Dear Ms. Carter, Hearing Officer, and Honorable City Planning Commissioners:

I am writing on behalf of Supporters Alliance for Environmental Responsibility (“SAFER”) regarding the California Environmental Quality Act (“CEQA”) Class 32 (In-fill Development) Categorical Exemption prepared for the proposed 6007 West Sunset Boulevard Project (CPC-2021-1557-DB-SPR-HCA; ENV-2021-1558-CE), pursuant to CEQA Guidelines section 15332, including all actions related or referring to the proposed construction, use, and maintenance of a new seven-story mixed-use development with 110 dwelling units and 14,657 square feet of ground floor commercial uses, with 239 automobile parking spaces provided within four levels of parking located at 6001-6023 West Sunset Boulevard, 1503-1517 Gordon Street, and 1506-151 La Baig Avenue in the City of Los Angeles (“Project”).

After reviewing the CEQA Class 32 (In-fill Development) Categorical Exemption Report (“CE” or “Exemption”), we conclude the Exemption fails as an informational document, and that there is a fair argument that the Project may have adverse environmental impacts. Therefore, we request that the City of Los Angeles (“City”) prepare an environmental impact report (“EIR”) for the Project pursuant to the CEQA, Public Resources Code (“PRC”) section 21000, et seq.

This comment has been prepared with the assistance of expert reviews by Certified Industrial Hygienist, Francis “Bud” Offermann, PE, CIH, and environmental consulting firm Soil/Water/Air Protection Enterprise (“SWAPE”). Mr. Offermann’s

comment and curriculum vitae are attached as Exhibit A hereto and is incorporated herein by reference in its entirety. SWAPE's comment and the consultants' curriculum vitae are attached as Exhibit B hereto and are incorporated herein by reference in their entirety.

I. PROJECT DESCRIPTION

The proposed Project would involve the demolition of existing structures and the construction, use, and maintenance of a new seven-story mixed-use development with 110 dwelling units and 14,657 square feet of ground floor commercial uses, with 239 automobile parking spaces within four levels of parking. See CE, pp. 4-7. Specifically, the Project would replace the four existing structures and two surface parking lots with a seven-story 79-foot mixed-use building and one level of subterranean parking. *Id.*, p. 6. The Project would include 109 residential dwelling units (69,957 sf), a residential lobby (1,736 sf), retail space (14,412 sf), retail lobby (259 sf), a fourth-floor amenity space (1,596 sf), and 13,373 sf of other ancillary uses, resulting in a total developed floor area of approximately 101,333 sf and a floor area ratio (FAR) of 3:1. *Id.*, pp. 6-7.

On behalf of the City Planning Commission, the Hearing Officer is considering the Applicant's following requests for the proposed Project:

1. An Exemption from CEQA, pursuant to State CEQA Guidelines Section 15332, Class 32, that there is no substantial evidence demonstrating that an exception to the categorical exemption pursuant to State CEQA Guidelines Section 15300.2, applies;
2. Pursuant to Los Angeles Municipal Code (LAMC) Section 12.22-A,25, a 23% Density Bonus for a Housing Development with a total of 110 units [with ten (10) units - 11% of the base density set aside for Very Low Income Households] in lieu of the base density of 90 units; and pursuant to LAMC Section 12.22-A,25(f)(8) and 12.22-A,25(g)(3), one (1) On-Menu Incentive, one (1) Off-Menu Incentive and one (1) Off-Menu waiver or modification:
 - a. An On-Menu Incentive to permit density averaging and vehicular access from a more restrictive to a less restrictive zone, pursuant to LAMC Section 12.22.A,25(f)(8);
 - b. An Off-Menu Incentive to pursuant to LAMC Section 12.22.A,25(g)(3), to permit a 3:1 FAR in lieu of the otherwise permitted 1.5:1 FAR in the C4-1-SN zone;
 - c. An Off-Menu waiver or modification of a development standard to permit a 22 percent reduction in the required open space.
3. Pursuant to LAMC Section 16.05-C, Site Plan Review for a development project that creates or results in an increase of 50 or more dwelling units or guest rooms.

The Project site is located at 6001-6023 West Sunset Boulevard, 1503-1517 Gordon Street, and 1506-151 La Baig Avenue. CE, p. 4. The Project site is located in the Hollywood Community Plan area of the City. *Id.*, p. 6. Four parcels (APN 5545-007-027, 5545-007-028, 5545-007-029 and 5545-007-030) are zoned C4-1-SN and have a land use designation of Highway Oriented Commercial. *Id.* The fifth parcel (APN 5545-007-026), the site of the northern surface parking lot, is zoned [Q]R4-1VL and has a land use designation of High Medium Residential. *Id.* The Project site is located in a Transit Priority Area (TPA), as defined by Public Resources Code (PRC) Section 21099, and mapped by the City. *Id.*

Furthermore, the Project site is located in an urbanized area that is developed with a mix of intense and dense multi-family and commercial uses. *Id.* The 22-story Sunset Gordon apartment building is located east of the Project Site, across Gordon Street. CE, p. 6. The approximately 12-story Los Angeles branch of Emerson College and an approximately 1-story retail store are located south of the Project Site, across West Sunset Boulevard. *Id.* The 2-story Hollywood Palms Inn & Suites is located west of the Project Site across La Baig Avenue. *Id.*

II. LEGAL STANDARD

As the California Supreme Court has held, “[i]f no EIR has been prepared for a nonexempt project, but substantial evidence in the record supports a fair argument that the project may result in significant adverse impacts, the proper remedy is to order preparation of an EIR.” *Communities for a Better Env’t v. South Coast Air Quality Mgmt. Dist.* (2010) 48 Cal.4th 310, 319-320 (*CBE v. SCAQMD*) (citing *No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 75, 88; *Brentwood Assn. for No Drilling, Inc. v. City of Los Angeles* (1982) 134 Cal.App.3d 491, 504–505). “Significant environmental effect” is defined very broadly as “a substantial or potentially substantial adverse change in the environment.” Pub. Res. Code (“PRC”) § 21068; see also 14 CCR § 15382. An effect on the environment need not be “momentous” to meet the CEQA test for significance; it is enough that the impacts are “not trivial.” *No Oil, Inc.*, 13 Cal.3d at 83. “The ‘foremost principle’ in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language.” *Communities for a Better Env’t v. Cal. Res. Agency* (2002) 103 Cal.App.4th 98, 109 (*CBE v. CRA*).

The EIR is the very heart of CEQA. *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1214 (*Bakersfield Citizens*); *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 927. The EIR is an “environmental ‘alarm bell’ whose purpose is to alert the public and its responsible officials to environmental changes before they have reached the ecological points of no return.” *Bakersfield Citizens*, 124 Cal.App.4th at 1220. The EIR also functions as a “document of accountability,” intended to “demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its

action.” *Laurel Heights Improvements Assn. v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 392. The EIR process “protects not only the environment but also informed self-government.” *Pocket Protectors*, 124 Cal.App.4th at 927.

An EIR is required if “there is substantial evidence, in light of the whole record before the lead agency, that the project may have a significant effect on the environment.” PRC § 21080(d); *see also Pocket Protectors*, 124 Cal.App.4th at 927. In very limited circumstances, an agency may avoid preparing an EIR by issuing a negative declaration, a written statement briefly indicating that a project will have no significant impact thus requiring no EIR (14 CCR § 15371), only if there is not even a “fair argument” that the project will have a significant environmental effect. PRC §§ 21100, 21064. Since “[t]he adoption of a negative declaration . . . has a terminal effect on the environmental review process,” by allowing the agency “to dispense with the duty [to prepare an EIR],” negative declarations are allowed only in cases where “the proposed project will not affect the environment at all.” *Citizens of Lake Murray v. San Diego* (1989) 129 Cal.App.3d 436, 440.

Mitigation measures may not be construed as project design elements or features in an environmental document under CEQA. The mitigated negative declaration must “separately identify and analyze the significance of the impacts . . . before proposing mitigation measures . . .” *Lotus vs. Department of Transportation* (2014) 223 Cal.App.4th 645, 658. A “mitigation measure” is a measure designed to minimize a project’s significant environmental impacts, PRC § 21002.1(a), while a “project” is defined as including “the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment.” CEQA Guidelines § 15378(a). Unlike mitigation measures, project elements are considered prior to making a significance determination. Measures are not technically “mitigation” under CEQA unless they are incorporated to avoid or minimize “significant” impacts. PRC § 21100(b)(3).

To ensure that the project’s potential environmental impacts are fully analyzed and disclosed, and that the adequacy of proposed mitigation measures is considered in depth, mitigation measures that are not included in the project’s design should not be treated as part of the project description. *Lotus*, 223 Cal.App.4th at 654-55, 656 fn.8. Mischaracterization of a mitigation measure as a project design element or feature is “significant,” and therefore amounts to a material error, “when it precludes or obfuscates required disclosure of the project’s environmental impacts and analysis of potential mitigation measures.” *Mission Bay Alliance v. Office of Community Investment & Infrastructure* (2016) 6 Cal.App.5th 160, 185.

Where an initial study shows that the project may have a significant effect on the environment, a mitigated negative declaration may be appropriate. However, a mitigated negative declaration is proper *only* if the project revisions would avoid or mitigate the potentially significant effects identified in the initial study “to a point where

clearly no significant effect on the environment would occur, and...there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment.” PRC §§ 21064.5, 21080(c)(2); *Mejia v. City of Los Angeles* (2005) 130 Cal.App.4th 322, 331. In that context, “may” means a reasonable possibility of a significant effect on the environment. PRC §§ 21082.2(a), 21100, 21151(a); *Pocket Protectors*, 124 Cal.App.4th at 927; *League for Protection of Oakland’s etc. Historic Res. v. City of Oakland* (1997) 52 Cal.App.4th 896, 904–05.

Under the “fair argument” standard, an EIR is required if any substantial evidence in the record indicates that a project may have an adverse environmental effect—even if contrary evidence exists to support the agency’s decision. 14 CCR § 15064(f)(1); *Pocket Protectors*, 124 Cal.App.4th at 931; *Stanislaus Audubon Society v. County of Stanislaus* (1995) 33 Cal.App.4th 144, 150-51; *Quail Botanical Gardens Found., Inc. v. City of Encinitas* (1994) 29 Cal.App.4th 1597, 1602. The “fair argument” standard creates a “low threshold” favoring environmental review through an EIR rather than through issuance of negative declarations or notices of exemption from CEQA. *Pocket Protectors*, 124 Cal.App.4th at 928.

The “fair argument” standard is virtually the opposite of the typical deferential standard accorded to agencies. As a leading CEQA treatise explains:

This ‘fair argument’ standard is very different from the standard normally followed by public agencies in their decision making. Ordinarily, public agencies weigh the evidence in the record and reach a decision based on a preponderance of the evidence. [Citation]. The fair argument standard, by contrast, prevents the lead agency from weighing competing evidence to determine who has a better argument concerning the likelihood or extent of a potential environmental impact.

Kostka & Zishcke, *Practice Under the California Environmental Quality Act*, §6.37 (2d ed. Cal. CEB 2021). The Courts have explained that “it is a question of law, not fact, whether a fair argument exists, and the courts owe no deference to the lead agency’s determination. Review is de novo, with a preference for resolving doubts in favor of environmental review.” *Pocket Protectors*, 124 Cal.App.4th at 928 (emphasis in original).

CEQA requires that an environmental document include a description of the project’s environmental setting or “baseline.” CEQA Guidelines § 15063(d)(2). The CEQA “baseline” is the set of environmental conditions against which to compare a project’s anticipated impacts. *CBE v. SCAQMD*, 48 Cal.4th at 321. CEQA Guidelines section 15125(a) states, in pertinent part, that a lead agency’s environmental review under CEQA:

...must include a description of the physical environmental conditions in

the vicinity of the project, as they exist at the time [environmental analysis] is commenced, from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a Lead Agency determines whether an impact is significant.

See *Save Our Peninsula Committee v. County of Monterey* (2001) 87 Cal.App.4th 99, 124-25 (“*Save Our Peninsula*”). As the court of appeal has explained, “the impacts of the project must be measured against the ‘real conditions on the ground,’” and not against hypothetical permitted levels. *Id.* at 121-23.

Lastly, to achieve its objectives of environmental protection, CEQA has a three-tiered structure. 14 CCR § 15002(k); *Committee to Save the Hollywoodland Specific Plan v. City of Los Angeles* (2008) 161 Cal.App.4th 1168, 1185-86 (“*Hollywoodland*”). First, if a project falls into an exempt category, or it can be seen with certainty that the activity in question will not have a significant effect on the environment, no further agency evaluation is required. *Id.* Second, if there is a possibility the project will have a significant effect on the environment, the agency must perform an initial threshold study. *Id.*; 14 CCR § 15063(a). If the study indicates that there is no substantial evidence that the project or any of its aspects may cause a significant effect on the environment the agency may issue a negative declaration. *Id.*; 14 CCR §§ 15063(b)(2), 15070. Finally, if the project will have a significant effect on the environment, an environmental impact report (“EIR”) is required. *Id.* Here, since the City exempted the Project from CEQA entirely, the first step of the CEQA process applies.

CEQA identifies certain classes of projects which are exempt from the provisions of CEQA. These are called categorical exemptions. 14 CCR §§ 15300, 15354. “Exemptions to CEQA are narrowly construed and ‘[e]xemption categories are not to be expanded beyond the reasonable scope of their statutory language.’ (Citations).” *Mountain Lion Foundation v. Fish & Game Com.* (1997) 16 Cal.4th 105, 125. The determination as to the appropriate scope of a categorical exemption is a question of law subject to independent, or de novo, review. *San Lorenzo Valley Community Advocates for Responsible Education v. San Lorenzo Valley Unified School Dist.*, (2006) 139 Cal. App. 4th 1356, 1375 (“[Q]uestions of interpretation or application of the requirements of CEQA are matters of law. (Citations.) Thus, for example, interpreting the scope of a CEQA exemption presents ‘a question of law, subject to de novo review by this court.’ (Citations).”)

In addition, there are several exceptions to CEQA’s categorical exemptions. See 14 CCR § 15300.2. At least one exception is relevant here:

Significant Effects. A project may never be exempted from CEQA if there is a “fair argument” that the project may have significant environmental impacts due to “unusual circumstances.” 14 CCR § 15300.2(c). The Supreme Court has held that since the agency may only exempt activities

that do not have a significant effect on the environment, a fair argument that a project will have significant effects precludes an exemption. *Wildlife Alive v. Chickering* (1976) 18 Cal.3d 190, 204.

Moreover, there are limitations to the Class 32 (in-fill development) categorical exemption. This CE can only be applied where “[a]pproval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.” 14 CCR § 15332(d). Furthermore, the recent case of *Berkeley Hillside Pres. v. City of Berkeley*, 60 Cal.4th 1086, 1105 (2015) held that there are two ways to establish that a CEQA exemption does not apply: (1) if the project may have adverse impacts due to unusual circumstances, or (2) if the project will have a significant environmental impact. The Court also held that the second provision does not require unusual circumstances.

Here, the City has issued a notice of exemption alleging that the proposed Project is exempt from CEQA review as a Class 32 (in-fill development) project. However, as discussed below, this CE is improper, and instead, a full CEQA analysis, such as an EIR, must be prepared for this Project.

III. DISCUSSION

A. The City Incorrectly Applied CEQA’s Class 32 (In-fill Development) Categorical Exemption to the Project and Thus a Full CEQA Analysis is Required.

The Exemption claims that the Project is categorically exempt pursuant to CEQA Guidelines section 15332. CE, p. 1. According to CEQA Guidelines section 15332, a project can only be characterized as an in-fill development and qualify for a Class 32 CE if “approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.” The Exemption claims that the Project would result in less-than-significant air quality impacts. CE, pp. 51-68. However, as disclosed below, this claim is unsubstantiated, as the Exemption’s analysis of adverse impacts related to the Project is insufficient for several reasons. As a result, the City’s determination that the proposed Project falls under CEQA’s Class 32 (in-fill development) CE is improper and in violation of CEQA.

Moreover, further review of the Project found that there is substantial evidence of a fair argument that the Project will have significant impacts on the public and surrounding environment relating to indoor and outdoor air quality, greenhouse gas emissions, health risk impacts, hazardous waste, and construction noise. Hence, a Class 32 (in-fill development) CE for the Project is inappropriate, and thus, a full CEQA analysis, such as an EIR, is required to adequately analyze and mitigate the impacts of the Project.

B. There is Substantial Evidence of a Fair Argument that the Project Will Have a Significant Health Risk Impact from its Indoor Air Quality Impacts.

Certified Industrial Hygienist, Francis “Bud” Offermann, PE, CIH, has conducted a review of the proposed Project and relevant documents regarding the Project’s indoor air emissions. Indoor Environmental Engineering Comments (October 14, 2021) (Exhibit A). Mr. Offermann concludes that it is likely that the Project will expose residents and commercial employees of the Project to significant impacts related to indoor air quality, and in particular, emissions of the cancer-causing chemical formaldehyde. Mr. Offermann is a leading expert on indoor air quality and has published extensively on the topic. Mr. Offermann’s expert comments and curriculum vitae are attached as Exhibit A.

Mr. Offermann explains that many composite wood products used in building materials and furnishings commonly found in offices, warehouses, residences, and hotels contain formaldehyde-based glues which off-gas formaldehyde over a very long time period. He states, “The primary source of formaldehyde indoors is composite wood products manufactured with urea-formaldehyde resins, such as plywood, medium density fiberboard, and particleboard. These materials are commonly used in building construction for flooring, cabinetry, baseboards, window shades, interior doors, and window and door trims.” Ex. A, pp. 2-3.

Formaldehyde is a known human carcinogen. Mr. Offermann states that there is a fair argument that future residents and employees of the commercial spaces will be exposed to a cancer risk from formaldehyde of approximately 120 per million, assuming all materials are compliant with the California Air Resources Board’s formaldehyde airborne toxics control measure. *Id.*, pp. 4-5. This exceeds the South Coast Air Quality Management District’s (“SCAQMD”) CEQA significance threshold for airborne cancer risk of 10 per million. *Id.*, p. 2.

Mr. Offermann also notes that the high cancer risk that may be posed by the Project’s indoor air emissions likely will be exacerbated by the additional cancer risk that exists as a result of the Project’s location near roadways with moderate to high traffic (i.e. Sunset Boulevard, Gordon Street, Gower Street, La Baig Avenue, etc.) and the high levels of PM 2.5 already present in the ambient air. *Id.*, pp. 10-11. No analysis has been conducted of the significant cumulative health impacts that will result to future employees of the Project.

Mr. Offermann concludes that these significant environmental impacts should be analyzed in an EIR and mitigation measures should be imposed to reduce the risk of formaldehyde exposure. *Id.*, p. 5. Mr. Offermann identifies mitigation measures that are available to reduce these significant health risks, including the installation of air filters and a requirement that the applicant use only composite wood materials (e.g. hardwood plywood, medium density fiberboard, particleboard) for all interior finish systems that are

made with CARB approved no-added formaldehyde (NAF) resins or ultra-low emitting formaldehyde (ULEF) resins in the buildings' interiors. *Id.*, pp. 12-13.

The City has a duty to investigate issues relating to a project's potential environmental impacts, especially those issues raised by an expert's comments. See *Cty. Sanitation Dist. No. 2 v. Cty. of Kern*, (2005) 127 Cal.App.4th 1544, 1597-98 ("under CEQA, the lead agency bears a burden to investigate potential environmental impacts"). In addition to assessing the Project's potential health impacts to residents and employees, Mr. Offermann identifies the investigatory path that the City should be following in developing an EIR to more precisely evaluate the Projects' future formaldehyde emissions and establishing mitigation measures that reduce the cancer risk below the SCAQMD level. Ex. A, pp. 6-10. Such an analysis would be similar in form to the air quality modeling and traffic modeling typically conducted as part of a CEQA review.

The failure to address the Project's formaldehyde emissions is contrary to the California Supreme Court's decision in *California Building Industry Ass'n v. Bay Area Air Quality Mgmt. Dist.* (2015) 62 Cal.4th 369, 386 ("*CBIA*"). At issue in *CBIA* was whether the Air District could enact CEQA guidelines that advised lead agencies that they must analyze the impacts of adjacent environmental conditions on a project. The Supreme Court held that CEQA does not generally require lead agencies to consider the environment's effects on a project. *CBIA*, 62 Cal.4th at 800-801. However, to the extent a project may exacerbate existing adverse environmental conditions at or near a project site, those would still have to be considered pursuant to CEQA. *Id.* at 801 ("CEQA calls upon an agency to evaluate existing conditions in order to assess whether a project could exacerbate hazards that are already present"). In so holding, the Court expressly held that CEQA's statutory language required lead agencies to disclose and analyze "impacts on **a project's users or residents** that arise **from the project's effects** on the environment." *Id.* at 800 (emphasis added).

The carcinogenic formaldehyde emissions identified by Mr. Offermann are not an existing environmental condition. Those emissions to the air will be from the Project. Residents and commercial employees will be users of the Project. Currently, there is presumably little if any formaldehyde emissions at the site. Once the project is built, emissions will begin at levels that pose significant health risks. Rather than excusing the City from addressing the impacts of carcinogens emitted into the indoor air from the project, the Supreme Court in *CBIA* expressly finds that this type of effect by the project on the environment and a "project's users and residents" must be addressed in the CEQA process.

The Supreme Court's reasoning is well-grounded in CEQA's statutory language. CEQA expressly includes a project's effects on human beings as an effect on the environment that must be addressed in an environmental review. "Section 21083(b)(3)'s express language, for example, requires a finding of a 'significant effect on the environment' (§ 21083(b)) whenever the 'environmental effects of a project will cause

substantial adverse effects *on human beings*, either directly or indirectly.” *CBIA*, 62 Cal.4th at 800 (emphasis in original). Likewise, “the Legislature has made clear—in declarations accompanying CEQA’s enactment—that public health and safety are of great importance in the statutory scheme.” *Id.* (citing e.g., §§ 21000, subds. (b), (c), (d), (g), 21001, subds. (b), (d)). It goes without saying that the future residents and commercial employees of the Project are human beings and the health and safety of those residents and workers is as important to CEQA’s safeguards as nearby residents currently living near the project site.

Because Mr. Offermann’s expert review is substantial evidence of a fair argument of a significant environmental impact to future users of the Project, an EIR must be prepared to disclose and mitigate those impacts.

C. The Exemption Relied on Unsubstantiated Input Parameters to Estimate Project Emissions and Thus Failed to Adequately Analyze the Project’s Air Quality Impacts.

The Exemption relies on emissions calculated with CalEEMod.2016.3.2. Ex. B, p. 3 (citing CE, p. 70). This model relies on recommended default values, or on site-specific information related to a number of factors. When more specific project information is known, the user may change the default values and input project-specific values, but CEQA requires that such changes be justified by substantial evidence. The model is used to generate a project’s construction and operational emissions. SWAPE reviewed the Project’s CalEEMod output files provided in the Air Quality Technical Report (“AQ Report”) and Greenhouse Gas Technical Report (“GHG Report”), as Attachment D-1 and Attachment D-2 to the Exemption, respectively, and found that several model inputs used to generate a project’s construction and operation emissions were not consistent with information disclosed in the Exemption. Ex. B, p. 3. As a result, SWAPE concludes that the Project’s construction and operational emissions are underestimated. Because the Exemption uses incorrect estimates for emissions, its air quality and GHG emissions analysis cannot be relied upon to determine the Project’s emissions. The particular errors identified by SWAPE are discussed below. These errors should be corrected in a subsequent CEQA document prior to approval of the Project. SWAPE’s expert comments and curriculum vitae are attached hereto as Exhibit B.

Specifically, SWAPE found that several values used in the Exemption and AQ Report’s air quality analysis were either inconsistent with information provided in the Exemption or otherwise unjustified (Ex. B, pp. 3-11), including:

1. Unsubstantiated Changes to Individual Construction Phase Lengths. Ex. B, pp. 3-5.
2. Unsubstantiated Number of Construction Days Per Week. Ex. B, pp. 5-6.
3. Unsubstantiated Reductions to Acres of Grading Values. Ex. B, pp. 6-7.
4. Unsubstantiated Changes to Gas Fireplace Values. Ex. B, pp. 7-8.

5. Incorrect Application of Construction-Related Mitigation Measures. Ex. B, pp. 8-10.
6. Incorrect Application of Waste-Related Operational Mitigation Measures. Ex. B, pp. 10-11.

Significantly, SWAPE points out that because the Exemption includes project design features intended to mitigate construction and waste-related operational emissions that are not formally included as mitigation measures, they may be eliminated from the Project's design altogether. Ex. B, pp. 9, 11. As a result, there is no guarantee that any of the Exemption's construction and waste-related operation measures will be implemented, monitored, and enforced on the Project site. *Id.*

By incorrectly including several construction-related mitigation measures and the waste-related operational mitigation measure without properly committing to their implementation, the Project's construction and operational emissions were underestimated and cannot be relied upon to determine the significance of the Project's air quality impacts. Thus, an EIR is needed to adequately address the air quality impacts of the proposed Project, and to mitigate those impacts accordingly.

D. There is Substantial Evidence of a Fair Argument that the Project May Have Significant Health Impacts as a Result of Diesel Particulate Emissions.

An EIR is required to evaluate the significant health impacts to individuals and workers from the Project's operational and construction-related diesel particulate matter ("DPM") emissions as a result of the proposed Project. SWAPE's analysis of health risks related to the Project concludes that the Exemption failed to adequately analyze the health impacts related to the Project's operational and construction DPM emissions, and provides substantial evidence of a fair argument that the Project will have significant health impacts as a result of such emissions. See Ex. B, pp. 11-13.

- i. The Exemption fails to adequately evaluate health risks from DPM emissions.

One of the primary emissions of concern regarding health effects for land development projects is DPM, which can be released during Project construction and operation. DPM consists of fine particles with a diameter less than 2.5 micrometers including a subgroup of ultrafine particles (with a diameter less than 0.1 micrometers). Diesel exhaust also contains a variety of harmful gases and cancer-causing substances. Exposure to DPM is a recognized health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. According to the California Air Resources Board ("CARB"), DPM exposure may lead to the following adverse health effects: aggravated asthma; chronic bronchitis; increased respiratory and cardiovascular hospitalizations; decreased lung function in children; lung cancer; and premature deaths for those with heart or lung disease.

SWAPE found that the AQ Report incorrectly concluded that the Project would have a less-than-significant health risk impact, without conducting a quantified construction or operational health risk analysis (“HRA”). Ex. B, pp. 11-12. Specifically, the AQ Report concludes that the Project would result in a less-than-significant construction-related health risk impact because of short-term construction duration, consistency with the applicable 2016 AQMP requirements, and compliance with regulatory control measures would minimize toxic air contaminant (“TAC”) emissions. *Id.* (citing CE, pp. 66-67). Additionally, the AQ Report concludes that the Project would result in a less-than-significant operational health risk impact because “Project operation would not exceed 100 trucks per day and thus not generate substantial [DPM]. *Id.*, p. 12 (citing CE, p. 60). However, as SWAPE points out, the AQ Report’s evaluation of the Project’s potential health risk impacts, as well as the subsequent less-than-significant impact conclusion, is incorrect for several reasons. Ex. B, pp. 12-13.

First, the AQ Report fails to quantitatively evaluate construction-related and operational TACs, or make a reasonable effort to connect emissions to health impacts posed to nearby existing sensitive receptors. Ex. B, p. 12. SWAPE identifies potential emissions from both the exhaust stacks of construction equipment and daily vehicle trips. *Id.* (citing CE, p. 14; Attach. B, p. 24, Table 2). As such, the Exemption fails to meet the CEQA requirement that projects correlate increases in project-generated emissions to adverse impacts on human health caused by those emissions.

Second, the AQ Report conclusion is also inconsistent with the most recent guidance published by the Office of Health Hazard Assessment (“OEHHA”), the organization responsible for providing guidance on conducting HRAs in California, as well as local air district guidelines.¹ Ex. B, p. 13. OEHHA recommends that projects lasting at least 2 months be evaluated for cancer risks to nearby sensitive receptors, which SWAPE points out is a time period which this Project easily exceeds. *Id.* The OEHHA document also recommends that if a project is expected to last over 6 months, the exposure should be evaluated throughout the project using a 30-year exposure duration to estimate individual cancer risks. *Id.* Based on its extensive experience, SWAPE reasonably assumes that the Project will last at least 30 years, and therefore recommends that health risk impacts from the Project be evaluated. *Id.* Because these recommendations reflect the most recent state health risk policies, SWAPE further recommends that an analysis of health risk impacts posed to nearby sensitive receptors from project-generated DPM emissions be included in a full CEQA analysis, such as an EIR for this Project. *Id.*

Third, by claiming a less-than-significant impact without conducting a quantified construction or operational HRA for nearby, existing sensitive receptors, SWAPE found

¹ “Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments.” OEHHA, February 2015, *available at*: <https://oehha.ca.gov/media/downloads/cnr/2015guidancemanual.pdf>.

that the Exemption fails to compare the Project's cumulative excess health risk impact to the applicable SCAQMD numeric threshold of 10 in one million, and lacks evidence to support its conclusion that the health risk would be under the threshold." Ex. B, p. 13. Thus, in accordance with the most relevant guidance, an assessment of the health risk posed to nearby, existing receptors from Project construction and operation needs to be conducted and included in an EIR.

ii. There is substantial evidence that the Project may have a significant health risk impact.

Correcting the above errors, SWAPE prepared a screening-level HRA to evaluate potential impacts from the construction and operation of the Project. Ex. B, pp. 13-17. SWAPE prepared a screening-level HRA to evaluate potential health risk impacts posed to residential sensitive receptors as a result of the Project's construction-related and operational TAC emissions. SWAPE used AERSCREEN, the leading screening-level air quality dispersion model. SWAPE applied a sensitive receptor distance of 25 meters and analyzed impacts to individuals at different stages of life based on OEHHA and SCAQMD guidance utilizing age sensitivity factors.

SWAPE found that the excess cancer risks at a sensitive receptor located approximately 25 meters away over the course of Project construction and operation, **with** utilizing the recommended age sensitivity factors, are approximately 22.8 in one million for 3rd trimester of pregnancy, 552 in one million for infants, and 80.4 in one million for children. Ex. B, p. 16. Moreover, the excess cancer risk over the course of a residential lifetime (i.e. 30 years) for Project operation and construction is approximately 662 in one million. *Id.* The cancer risks to 3rd trimester of pregnancy, infants, children, and lifetime residents appreciably exceed SCAQMD's threshold of 10 in one million, thus resulting in a potentially significant impact not previously addressed or identified by the Exemption. Hence, an EIR is required for the Project.

Additionally, SWAPE found that the excess cancer risks at a sensitive receptor located approximately 25 meters away over the course of Project construction and operation, **without** utilizing the recommended age sensitivity factors, are approximately 55.2 in one million for infants and 26.8 in one million for children. Ex. B, p. 16. Moreover, the excess cancer risk over the course of a residential lifetime (i.e. 30 years) for Project operation and construction is approximately 91.3 in one million. *Id.* The cancer risks to infants, children, and lifetime residents appreciably exceed SCAQMD's threshold of 10 in one million, thus resulting in a potentially significant impact not previously addressed or identified by the Exemption. Hence, an EIR is required for the Project.

CEQA requires an agency to include an analysis of health risks that connects the Project's air emissions with the health risk posed by those emissions. SWAPE's screening-level HRA demonstrates that the Project's construction and operation may have a significant health risk impact, when correct exposure assumptions and up-to-

date, applicable guidance are used. Because SWAPE's screening-level HRA indicates a potentially significant impact, the City must conduct a full CEQA analysis. In particular, an EIR should be prepared that includes an HRA which makes a reasonable effort to connect the Project's air quality emissions and the potential health risks posed to nearby receptors. Thus, as SWAPE recommends, the City should prepare an updated, quantified air pollution model as well as an updated, quantified refined health risk analysis which adequately and accurately evaluates health risk impacts associated with both Project construction and operation. Ex. B, pp. 16-17.

E. The Exemption Failed to Adequately Analyze Greenhouse Gas Impacts and Thus the Project May Result in Significant Greenhouse Gas Emissions.

The Exemption's GHG Report estimates that the Project would generate net annual greenhouse gas ("GHG") emissions of 1,380 metric tons of carbon dioxide equivalents per year ("MT CO₂E/year"), which would not exceed the SCAQMD threshold of 3.0 MT CO₂e/SP/year. CE, p. 72, Table 20. According to SWAPE, the GHG Report elects not to apply a quantitative GHG threshold. Instead, the GHG Report's GHG analysis relies upon the Project's consistency with CARB's 2017 Climate Change Scoping Plan, SCAG's 2016-2040 RTP/SCS, the Sustainable City pLAN 2019, and the Los Angeles Green Building Code in order to conclude that the Project would result in a less-than-significant GHG impact Ex. B, p. 17 (citing CE, pp. 74-90). As a result, the GHG Report fails to adequately evaluate the GHG impacts of the Project. Thus, the GHG Report's analysis and subsequent less-than-significant impact conclusion, is incorrect for several reasons. See *Id.*, pp. 17-

First, the Exemption and GHG Report's quantitative analysis relies upon an incorrect and unsubstantiated air model. *Id.*, p. 18. As a result, GHG emissions are underestimated and the Exemption's quantitative GHG analysis should not be relied upon to determine Project significance. *Id.* Thus, a full CEQA analysis, such as an EIR, should be prepared to adequately assess the Project's potential GHG impacts on the surrounding environment from construction and operation.

Second, the GHG Report utilizes an outdated GHG threshold. SWAPE notes that when compared to the correct quantitative threshold, the Project's GHG impacts are demonstrably significant. See Ex. B, pp. 18-19. SWAPE explains:

The Exemption estimates that the Project would house and employ approximately 248 and 29 people, respectively (p. 59). As such, we estimate a service population of 277 people. When dividing the Project's net annual GHG emissions, as estimated by the Exemption, by a service population of 277 people, we find that the Project would emit approximately 5.0 MT CO₂e/SP/year.... As [SWAPE] demonstrate[s] ..., the Project's service population efficiency value, as estimated by the Exemption's provided net annual GHG emission estimates and service

population, exceed the SCAQMD 2035 efficiency target of 3.0 MT CO₂e/SP/year, indicating a potentially significant impact not previously identified or addressed by the Exemption.

Id., pp. 18-19. Thus, a full CEQA analysis, such as an EIR, must be prepared and should include an updated GHG analysis and incorporate mitigation measures intended to reduce GHG emissions to less-than-significant levels. Additionally, SWAPE recommends that the City implements all of the Exemption's project design features, such as the GHG reduction strategies described in the Exemption's CARB Consistency Analysis, as formal mitigation measures to reduce GHG emissions to less-than significant levels. *Id.*, p. 21 (citing CE, pp. 77-79, Table 21).

Third, the GHG Report fails to consider the performance-based standards underlying CARB's 2017 Scoping Plan. Ex. B, pp. 19-20. Based on SWAPE's quantitative consistency evaluation utilizing these standards, SWAPE concluded that the Exemption's GHG significance determination regarding the Project's consistency with applicable plans and policies should not be relied upon. *Id.*, p. 20.

Fourth, the GHG Report also fails to consider the performance-based standards underlying SCAG's RTP/SCS. *Id.*, pp. 20-21. SWAPE's quantitative consistency evaluation utilizing these standards concludes that the Exemption's GHG significance determination concerning the Project's consistency with applicable plans and policies should not be relied upon. *Id.*, p. 21.

SWAPE's analysis demonstrated a potentially significant health risk impact from the Project that necessitates preparation of a full CEQA analysis, such as an EIR, and further mitigation. Moreover, SWAPE proposes that the Project's design features that are incorrectly applied as mitigation measures by the Exemption and GHG Report be implemented formally as mitigation measures in order to adequately reduce construction and operational emissions. In addition to implementing these measures, an EIR should be included with updated air quality, health risk, and GHG analysis.

F. The Exemption Failed to Adequately Analyze Hazards and Hazardous Materials at the Project Site and Thus the Project May Result in Significant Hazardous Waste Impacts.

One of the parcels at the Project site was used for an automobile repair facility and other commercial uses that could result in impacts from hazardous materials located at the site. See Ex. B, pp. 1-2 (citing CE, p. 4). The Exemption does not rely on any substantial evidence to support its conclusion that the Project will not expose the public, workers, or the environment to potentially hazardous materials. In preparing the Exemption, neither the City nor the Applicant prepared a Phase I Environmental Site Assessment ("ESA") for the Project site. According to SWAPE, "[t]he preparation of a Phase I ESA is often undertaken in the preparation of CEQA documents to identify hazardous waste issues that may present impacts to the public, workers, or the

environment, and which may require further investigation, including environmental sampling and cleanup.” Ex. B, p. 1.

Standards for performing a Phase I ESA have been established by the US EPA and the American Society for Testing and Materials Standards (“ASTM”). *Id.*, p. 2. Phase I ESAs include a review of all known sites in the vicinity of the subject property that are on regulatory agency databases undergoing assessment or cleanup activities; an inspection; interviews with people knowledgeable about the property; and recommendations for further actions to address potential hazards. *Id.* “Phase I ESAs conclude with the identification of any ‘recognized environmental conditions’ (“RECs”) and recommendations to address such conditions.” *Id.*

It is well-established that CEQA requires analysis of toxic soil contamination that may be disturbed by a Project, and that the effects of this disturbance on human health and the environment must be analyzed. The Exemption’s baseline for this potential impact is flawed for failure to identify existing soil conditions at the Project site. Without knowing the presence and levels of these chemicals, the Exemption cannot justify its conclusion that human exposure impacts are unlikely, and that the Project poses no significant risks from the release of hazardous materials into the environment. Thus, SWAPE’s following recommendations should be implemented prior to the approval of the proposed Project:

A Phase I ESA, completed by a licensed environmental professional, is necessary for inclusion in a full CEQA analysis to identify recognized environmental conditions, if any, at the proposed Project site. If past land uses include RECs, a Phase II should be conducted to sample for residual concentrations of contaminants in soil. Any contamination that is identified above regulatory screening levels, including California Department of Toxic Substances Control Soil Screening Levels, should be further evaluated and cleaned up, if necessary, in coordination with the Regional Water Quality Control Board and the California Department of Toxic Substances Control.

Ex. B, p. 2 (citations omitted).

G. There is Substantial Evidence of a Fair Argument that the Project Will Have Significant Noise Impact.

Review of the proposed Project’s Noise and Vibration Technical Report (“Noise Report”), as Attachment C to the Exemption, provides substantial evidence in the record to support a fair argument that the Exemption inadequately analyzed construction noise levels and failed to mitigate significant construction noise impacts. Specifically, the Noise Report does not analyze the Project’s full geographic range of noise impacts by ignoring activities occurring farther than 50 feet from sensitive receptors in violation of CEQA. *See, e.g., Sierra Watch v. County of Placer* (Cal. Ct. App., Aug. 24, 2021, No.

C088130) 2021 WL 4305062, at *15 (holding that the County's failure to consider noise impacts occurring further than 50 feet from expected construction activity in an EIR for a proposed resort development project rendered the EIR inadequate under CEQA).

Here, the Noise Report states that "the criteria used in the construction noise analysis presented in this technical report is a noise level exceeding 75 dBA **at a distance of 50 feet** when operated within 500 feet of a residential zone." Attach. C, p. 22 (emphasis added). The Noise Report identifies only four sensitive receptors that it considered within 500 feet of the Project site, including:

R1: A 22-story high-rise apartment building east of the Project Site across Gordon Street (1522 Gordon Street), located approximately 50 feet to the east of the Project Site.

R2: Single- and multi-family residential uses located adjacent to the northwest of the Project Site (closest residences being 1514 La Baig Avenue).

R3: Single- and multi-family residential uses located adjacent to the northeast of the Project Site (closest residence 1523 Gordon Street).

R4: Emerson College Los Angeles Center, which includes an auditorium, screening room and audio and video labs, to the south across West Sunset Boulevard (5960 West Sunset Boulevard), located approximately 90 feet to the south of the Project Site.

Attach. C, pp. 16, 19. Noise levels of any sensitive receptors located at greater distances from the Project site (i.e., more than 500 feet) than those listed above, including Happy Birch Preschool, located approximately 600 feet south of the Project site, and Joseph Le Conte Middle School (which also contains the Citizens of the World Charter School), located approximately 1,100 feet southeast of the Project site, were not evaluated. *Id.*, p. 19. However, the Noise Report notes that significant noise impacts can affect sensitive receptors at distances beyond 50- and even 500-feet due to atmospheric factors that can increase noise levels at long distances (e.g., more than 500 feet). *Id.*, p. 8.

The Exemption discusses noise impacts to sensitive receptors lying within 50 feet of expected construction activity, but fails to consider noise impacts to sensitive receptors lying outside this 50-foot zone. Instead, the Noise Report explains that the "[t]ypes of construction equipment expected to be used during Project construction could produce maximum noise levels of 75 dBA L_{max} to 90 dBA L_{max} at a reference distance of 50 feet from the noise source." Attach. C, p. 27, Table 7. According to *Sierra Watch v. County of Placer*, when "consider[ing] potential noise impacts to other receptors sitting at a similar distance from planned construction activities," the City "cannot employ a methodological approach in a manner that entirely forecloses

consideration of evidence showing impacts to the neighboring region, impacts beyond a project's boundaries, or, as occurred in this case [of the 6007 West Sunset Boulevard Project], [noise] impacts to areas sitting beyond 50 feet from construction activities." *Sierra Watch*, (Cal. Ct. App., August 24, 2021, No. C088130) 2021 WL 4305062, at *15. Hence, this limitation is the exact type of "arbitrary line drawing" that courts have found falls short of an adequate impact analysis under CEQA, and therefore, is improper. *Id.*

As a result, while the Noise Report acknowledges potential significant impacts to a receptor sitting 50 feet from expected construction activity, "it would altogether ignore potential impacts to a receptor sitting an inch more distant - even though the noise levels at these two distances would presumably be the same." *Id.* Thus, because there is substantial evidence of potential significant construction noise impacts to sensitive receptors outside the 50-foot zone that the Exemption fails to consider, a full CEQA analysis, such as an EIR, should be prepared and include an adequate analysis of the potential noise impacts on sensitive receptors that might be significantly impacted by the noise from the Project's construction activities that are not within 50 feet of the Project site.

IV. CONCLUSION

For the foregoing reasons, the City's Class 32 (in-fill development) CE determination for the proposed Project is inappropriate and should be withdrawn, and an EIR should be prepared and the draft EIR circulated for public review and comment in accordance with CEQA. Thank you for considering these comments.

Sincerely,



Victoria Ann Yundt
LOZEAU | DRURY LLP

Exhibit A



INDOOR ENVIRONMENTAL ENGINEERING



1448 Pine Street, Suite 103 San Francisco, California 94109

Telephone: (415) 567-7700

E-mail: offermann@IEE-SF.com

<http://www.iee-sf.com>

Date: October 14, 2021

To: Richard Drury
Lozeau | Drury LLP
1939 Harrison Street, Suite 150
Oakland, California 94612

From: Francis J. Offermann PE CIH

Subject: Indoor Air Quality: 6007 Sunset Project, Los Angeles, CA
(IEE File Reference: P-4508)

Pages: 19

Indoor Air Quality Impacts

Indoor air quality (IAQ) directly impacts the comfort and health of building occupants, and the achievement of acceptable IAQ in newly constructed and renovated buildings is a well-recognized design objective. For example, IAQ is addressed by major high-performance building rating systems and building codes (California Building Standards Commission, 2014; USGBC, 2014). Indoor air quality in homes is particularly important because occupants, on average, spend approximately ninety percent of their time indoors with the majority of this time spent at home (EPA, 2011). Some segments of the population that are most susceptible to the effects of poor IAQ, such as the very young and the elderly, occupy their homes almost continuously. Additionally, an increasing number of adults are working from home at least some of the time during the workweek. Indoor air quality also is a serious concern for workers in hotels, offices and other business establishments.

The concentrations of many air pollutants often are elevated in homes and other buildings relative to outdoor air because many of the materials and products used indoors contain and release a variety of pollutants to air (Hodgson et al., 2002; Offermann and Hodgson,

2011). With respect to indoor air contaminants for which inhalation is the primary route of exposure, the critical design and construction parameters are the provision of adequate ventilation and the reduction of indoor sources of the contaminants.

Indoor Formaldehyde Concentrations Impact. In the California New Home Study (CNHS) of 108 new homes in California (Offermann, 2009), 25 air contaminants were measured, and formaldehyde was identified as the indoor air contaminant with the highest cancer risk as determined by the California Proposition 65 Safe Harbor Levels (OEHHA, 2017a), No Significant Risk Levels (NSRL) for carcinogens. The NSRL is the daily intake level calculated to result in one excess case of cancer in an exposed population of 100,000 (i.e., ten in one million cancer risk) and for formaldehyde is 40 µg/day. The NSRL concentration of formaldehyde that represents a daily dose of 40 µg is 2 µg/m³, assuming a continuous 24-hour exposure, a total daily inhaled air volume of 20 m³, and 100% absorption by the respiratory system. All of the CNHS homes exceeded this NSRL concentration of 2 µg/m³. The median indoor formaldehyde concentration was 36 µg/m³, and ranged from 4.8 to 136 µg/m³, which corresponds to a median exceedance of the 2 µg/m³ NSRL concentration of 18 and a range of 2.3 to 68.

Therefore, the cancer risk of a resident living in a California home with the median indoor formaldehyde concentration of 36 µg/m³, is 180 per million as a result of formaldehyde alone. The CEQA significance threshold for airborne cancer risk is 10 per million, as established by the South Coast Air Quality Management District (SCAQMD, 2015).

Besides being a human carcinogen, formaldehyde is also a potent eye and respiratory irritant. In the CNHS, many homes exceeded the non-cancer reference exposure levels (RELs) prescribed by California Office of Environmental Health Hazard Assessment (OEHHA, 2017b). The percentage of homes exceeding the RELs ranged from 98% for the Chronic REL of 9 µg/m³ to 28% for the Acute REL of 55 µg/m³.

The primary source of formaldehyde indoors is composite wood products manufactured with urea-formaldehyde resins, such as plywood, medium density fiberboard, and

particleboard. These materials are commonly used in building construction for flooring, cabinetry, baseboards, window shades, interior doors, and window and door trims.

In January 2009, the California Air Resources Board (CARB) adopted an airborne toxics control measure (ATCM) to reduce formaldehyde emissions from composite wood products, including hardwood plywood, particleboard, medium density fiberboard, and also furniture and other finished products made with these wood products (California Air Resources Board 2009). While this formaldehyde ATCM has resulted in reduced emissions from composite wood products sold in California, they do not preclude that homes built with composite wood products meeting the CARB ATCM will have indoor formaldehyde concentrations below cancer and non-cancer exposure guidelines.

A follow up study to the California New Home Study (CNHS) was conducted in 2016-2018 (Singer et. al., 2019), and found that the median indoor formaldehyde in new homes built after 2009 with CARB Phase 2 Formaldehyde ATCM materials had lower indoor formaldehyde concentrations, with a median indoor concentrations of $22.4 \mu\text{g}/\text{m}^3$ (18.2 ppb) as compared to a median of $36 \mu\text{g}/\text{m}^3$ found in the 2007 CNHS. Unlike in the CNHS study where formaldehyde concentrations were measured with pumped DNPH samplers, the formaldehyde concentrations in the HENGH study were measured with passive samplers, which were estimated to under-measure the true indoor formaldehyde concentrations by approximately 7.5%. Applying this correction to the HENGH indoor formaldehyde concentrations results in a median indoor concentration of $24.1 \mu\text{g}/\text{m}^3$, which is 33% lower than the $36 \mu\text{g}/\text{m}^3$ found in the 2007 CNHS.

Thus, while new homes built after the 2009 CARB formaldehyde ATCM have a 33% lower median indoor formaldehyde concentration and cancer risk, the median lifetime cancer risk is still 120 per million for homes built with CARB compliant composite wood products. This median lifetime cancer risk is more than 12 times the OEHHA 10 in a million cancer risk threshold (OEHHA, 2017a).

With respect to the 6007 Sunset Project, Los Angeles, CA the buildings consist of residential and commercial spaces.

The residential occupants will potentially have continuous exposure (e.g. 24 hours per day, 52 weeks per year). These exposures are anticipated to result in significant cancer risks resulting from exposures to formaldehyde released by the building materials and furnishing commonly found in residential construction.

Because these residences will be constructed with CARB Phase 2 Formaldehyde ATCM materials, and be ventilated with the minimum code required amount of outdoor air, the indoor residential formaldehyde concentrations are likely similar to those concentrations observed in residences built with CARB Phase 2 Formaldehyde ATCM materials, which is a median of 24.1 $\mu\text{g}/\text{m}^3$ (Singer et. al., 2020)

Assuming that the residential occupants inhale 20 m^3 of air per day, the average 70-year lifetime formaldehyde daily dose is 482 $\mu\text{g}/\text{day}$ for continuous exposure in the residences. This exposure represents a cancer risk of 120 per million, which is more than 12 times the CEQA cancer risk of 10 per million. For occupants that do not have continuous exposure, the cancer risk will be proportionally less but still substantially over the CEQA cancer risk of 10 per million (e.g. for 12/hour/day occupancy, more than 6 times the CEQA cancer risk of 10 per million).

The employees of the commercial spaces are expected to experience significant indoor exposures (e.g., 40 hours per week, 50 weeks per year). These exposures for employees are anticipated to result in significant cancer risks resulting from exposures to formaldehyde released by the building materials and furnishing commonly found in offices, warehouses, residences and hotels.

Because the commercial spaces will be constructed with CARB Phase 2 Formaldehyde ATCM materials, and be ventilated with the minimum code required amount of outdoor air, the indoor formaldehyde concentrations are likely similar to those concentrations observed in residences built with CARB Phase 2 Formaldehyde ATCM materials, which is a median of 24.1 $\mu\text{g}/\text{m}^3$ (Singer et. al., 2020)

Assuming that the employees of commercial spaces work 8 hours per day and inhale 20 m³ of air per day, the formaldehyde dose per work-day at the offices is 161 µg/day.

Assuming that these employees work 5 days per week and 50 weeks per year for 45 years (start at age 20 and retire at age 65) the average 70-year lifetime formaldehyde daily dose is 70.9 µg/day.

This is 1.77 times the NSRL (OEHHA, 2017a) of 40 µg/day and represents a cancer risk of 17.7 per million, which exceeds the CEQA cancer risk of 10 per million. This impact should be analyzed in an environmental impact report (“EIR”), and the agency should impose all feasible mitigation measures to reduce this impact. Several feasible mitigation measures are discussed below and these and other measures should be analyzed in an EIR.

Appendix A, Indoor Formaldehyde Concentrations and the CARB Formaldehyde ATCM, provides analyses that show utilization of CARB Phase 2 Formaldehyde ATCM materials will not ensure acceptable cancer risks with respect to formaldehyde emissions from composite wood products.

Even composite wood products manufactured with CARB certified ultra low emitting formaldehyde (ULEF) resins do not insure that the indoor air will have concentrations of formaldehyde that meet the OEHHA cancer risks that substantially exceed 10 per million. The permissible emission rates for ULEF composite wood products are only 11-15% lower than the CARB Phase 2 emission rates. Only use of composite wood products made with no-added formaldehyde resins (NAF), such as resins made from soy, polyvinyl acetate, or methylene diisocyanate can insure that the OEHHA cancer risk of 10 per million is met.

The following describes a method that should be used, prior to construction in the environmental review under CEQA, for determining whether the indoor concentrations resulting from the formaldehyde emissions of specific building materials/furnishings selected exceed cancer and non-cancer guidelines. Such a design analyses can be used to identify those materials/furnishings prior to the completion of the City’s CEQA review and project approval, that have formaldehyde emission rates that contribute to indoor

concentrations that exceed cancer and non-cancer guidelines, so that alternative lower emitting materials/furnishings may be selected and/or higher minimum outdoor air ventilation rates can be increased to achieve acceptable indoor concentrations and incorporated as mitigation measures for this project.

Pre-Construction Building Material/Furnishing Formaldehyde Emissions Assessment

This formaldehyde emissions assessment should be used in the environmental review under CEQA to assess the indoor formaldehyde concentrations from the proposed loading of building materials/furnishings, the area-specific formaldehyde emission rate data for building materials/furnishings, and the design minimum outdoor air ventilation rates. This assessment allows the applicant (and the City) to determine, before the conclusion of the environmental review process and the building materials/furnishings are specified, purchased, and installed, if the total chemical emissions will exceed cancer and non-cancer guidelines, and if so, allow for changes in the selection of specific material/furnishings and/or the design minimum outdoor air ventilations rates such that cancer and non-cancer guidelines are not exceeded.

1.) Define Indoor Air Quality Zones. Divide the building into separate indoor air quality zones, (IAQ Zones). IAQ Zones are defined as areas of well-mixed air. Thus, each ventilation system with recirculating air is considered a single zone, and each room or group of rooms where air is not recirculated (e.g. 100% outdoor air) is considered a separate zone. For IAQ Zones with the same construction material/furnishings and design minimum outdoor air ventilation rates. (e.g. hotel rooms, apartments, condominiums, etc.) the formaldehyde emission rates need only be assessed for a single IAQ Zone of that type.

2.) Calculate Material/Furnishing Loading. For each IAQ Zone, determine the building material and furnishing loadings (e.g., m² of material/m² floor area, units of furnishings/m² floor area) from an inventory of all potential indoor formaldehyde sources, including flooring, ceiling tiles, furnishings, finishes, insulation, sealants, adhesives, and any products constructed with composite wood products containing urea-formaldehyde resins (e.g., plywood, medium density fiberboard, particleboard).

3.) Calculate the Formaldehyde Emission Rate. For each building material, calculate the formaldehyde emission rate ($\mu\text{g}/\text{h}$) from the product of the area-specific formaldehyde emission rate ($\mu\text{g}/\text{m}^2\text{-h}$) and the area (m^2) of material in the IAQ Zone, and from each furnishing (e.g. chairs, desks, etc.) from the unit-specific formaldehyde emission rate ($\mu\text{g}/\text{unit-h}$) and the number of units in the IAQ Zone.

NOTE: As a result of the high-performance building rating systems and building codes (California Building Standards Commission, 2014; USGBC, 2014), most manufacturers of building materials furnishings sold in the United States conduct chemical emission rate tests using the California Department of Health “Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions for Indoor Sources Using Environmental Chambers,” (CDPH, 2017), or other equivalent chemical emission rate testing methods. Most manufacturers of building furnishings sold in the United States conduct chemical emission rate tests using ANSI/BIFMA M7.1 Standard Test Method for Determining VOC Emissions (BIFMA, 2018), or other equivalent chemical emission rate testing methods.

CDPH, BIFMA, and other chemical emission rate testing programs, typically certify that a material or furnishing does not create indoor chemical concentrations in excess of the maximum concentrations permitted by their certification. For instance, the CDPH emission rate testing requires that the measured emission rates when input into an office, school, or residential model do not exceed one-half of the OEHHA Chronic Exposure Guidelines (OEHHA, 2017b) for the 35 specific VOCs, including formaldehyde, listed in Table 4-1 of the CDPH test method (CDPH, 2017). These certifications themselves do not provide the actual area-specific formaldehyde emission rate (i.e., $\mu\text{g}/\text{m}^2\text{-h}$) of the product, but rather provide data that the formaldehyde emission rates do not exceed the maximum rate allowed for the certification. Thus, for example, the data for a certification of a specific type of flooring may be used to calculate that the area-specific emission rate of formaldehyde is less than $31 \mu\text{g}/\text{m}^2\text{-h}$, but not the actual measured specific emission rate, which may be 3, 18, or $30 \mu\text{g}/\text{m}^2\text{-h}$. These area-specific emission rates determined from the product certifications of CDPH, BIFA, and other certification programs can be used as an initial estimate of the formaldehyde emission rate.

If the actual area-specific emission rates of a building material or furnishing is needed (i.e. the initial emission rates estimates from the product certifications are higher than desired), then that data can be acquired by requesting from the manufacturer the complete chemical emission rate test report. For instance if the complete CDPH emission test report is requested for a CDHP certified product, that report will provide the actual area-specific emission rates for not only the 35 specific VOCs, including formaldehyde, listed in Table 4-1 of the CDPH test method (CDPH, 2017), but also all of the cancer and reproductive/developmental chemicals listed in the California Proposition 65 Safe Harbor Levels (OEHHA, 2017a), all of the toxic air contaminants (TACs) in the California Air Resources Board Toxic Air Contamination List (CARB, 2011), and the 10 chemicals with the greatest emission rates.

Alternatively, a sample of the building material or furnishing can be submitted to a chemical emission rate testing laboratory, such as Berkeley Analytical Laboratory (<https://berkeleyanalytical.com>), to measure the formaldehyde emission rate.

4.) Calculate the Total Formaldehyde Emission Rate. For each IAQ Zone, calculate the total formaldehyde emission rate (i.e. $\mu\text{g/h}$) from the individual formaldehyde emission rates from each of the building material/furnishings as determined in Step 3.

5.) Calculate the Indoor Formaldehyde Concentration. For each IAQ Zone, calculate the indoor formaldehyde concentration ($\mu\text{g/m}^3$) from Equation 1 by dividing the total formaldehyde emission rates (i.e. $\mu\text{g/h}$) as determined in Step 4, by the design minimum outdoor air ventilation rate (m^3/h) for the IAQ Zone.

$$C_{in} = \frac{E_{total}}{Q_{oa}} \quad (\text{Equation 1})$$

where:

C_{in} = indoor formaldehyde concentration ($\mu\text{g/m}^3$)

E_{total} = total formaldehyde emission rate ($\mu\text{g/h}$) into the IAQ Zone.

Q_{oa} = design minimum outdoor air ventilation rate to the IAQ Zone (m^3/h)

The above Equation 1 is based upon mass balance theory, and is referenced in Section

3.10.2 “Calculation of Estimated Building Concentrations” of the California Department of Health “Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions for Indoor Sources Using Environmental Chambers”, (CDPH, 2017).

6.) Calculate the Indoor Exposure Cancer and Non-Cancer Health Risks. For each IAQ Zone, calculate the cancer and non-cancer health risks from the indoor formaldehyde concentrations determined in Step 5 and as described in the OEHHA Air Toxics Hot Spots Program Risk Assessment Guidelines; Guidance Manual for Preparation of Health Risk Assessments (OEHHA, 2015).

7.) Mitigate Indoor Formaldehyde Exposures of exceeding the CEQA Cancer and/or Non-Cancer Health Risks. In each IAQ Zone, provide mitigation for any formaldehyde exposure risk as determined in Step 6, that exceeds the CEQA cancer risk of 10 per million or the CEQA non-cancer Hazard Quotient of 1.0.

Provide the source and/or ventilation mitigation required in all IAQ Zones to reduce the health risks of the chemical exposures below the CEQA cancer and non-cancer health risks.

Source mitigation for formaldehyde may include:

- 1.) reducing the amount materials and/or furnishings that emit formaldehyde
- 2.) substituting a different material with a lower area-specific emission rate of formaldehyde

Ventilation mitigation for formaldehyde emitted from building materials and/or furnishings may include:

- 1.) increasing the design minimum outdoor air ventilation rate to the IAQ Zone.

NOTE: Mitigating the formaldehyde emissions through use of less material/furnishings, or use of lower emitting materials/furnishings, is the preferred mitigation option, as mitigation with increased outdoor air ventilation increases initial and operating costs associated with the heating/cooling systems.

Further, we are not asking that the builder “speculate” on what and how much composite materials be used, but rather at the design stage to select composite wood materials based on the formaldehyde emission rates that manufacturers routinely conduct using the California Department of Health “Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions for Indoor Sources Using Environmental Chambers,” (CDPH, 2017), and use the procedure described earlier above (i.e. Pre-Construction Building Material/Furnishing Formaldehyde Emissions Assessment) to insure that the materials selected achieve acceptable cancer risks from material off gassing of formaldehyde.

Outdoor Air Ventilation Impact. Another important finding of the CNHS, was that the outdoor air ventilation rates in the homes were very low. Outdoor air ventilation is a very important factor influencing the indoor concentrations of air contaminants, as it is the primary removal mechanism of all indoor air generated contaminants. Lower outdoor air exchange rates cause indoor generated air contaminants to accumulate to higher indoor air concentrations. Many homeowners rarely open their windows or doors for ventilation as a result of their concerns for security/safety, noise, dust, and odor concerns (Price, 2007). In the CNHS field study, 32% of the homes did not use their windows during the 24-hour Test Day, and 15% of the homes did not use their windows during the entire preceding week. Most of the homes with no window usage were homes in the winter field session. Thus, a substantial percentage of homeowners never open their windows, especially in the winter season. The median 24-hour measurement was 0.26 air changes per hour (ach), with a range of 0.09 ach to 5.3 ach. A total of 67% of the homes had outdoor air exchange rates below the minimum California Building Code (2001) requirement of 0.35 ach. Thus, the relatively tight envelope construction, combined with the fact that many people never open their windows for ventilation, results in homes with low outdoor air exchange rates and higher indoor air contaminant concentrations.

The 6007 Sunset Project, Los Angeles, CA is close to roads with moderate to high traffic (e.g., Sunset Boulevard, Gordon Street, Gower Street, La Baig Avenue, etc.) and thus the Project site is a sound impacted site.

According to the 6007 Sunset Project – CEQA Class 32 Categorical Exemption Report (ESA, 2021), The future plus project traffic noise levels reported in Table 11 range from 63.1 dBA to 70.7 dBA CNEL.

As a result of the anticipated high outdoor noise levels, the current project will require a mechanical supply of outdoor air ventilation to allow for a habitable interior environment with closed windows and doors. Such a ventilation system would allow windows and doors to be kept closed at the occupant’s discretion to control exterior noise within building interiors.

PM_{2.5} Outdoor Concentrations Impact. An additional impact of the nearby motor vehicle traffic associated with this project, are the outdoor concentrations of PM_{2.5}. According to the 6007 Sunset Project – CEQA Class 32 Categorical Exemption Report (ESA, 2021) the Project is located in the South Coast Air Basin, which is a State and Federal non-attainment area for PM_{2.5}.

An air quality analyses should to be conducted to determine the concentrations of PM_{2.5} in the outdoor and indoor air that people inhale each day. This air quality analyses needs to consider the cumulative impacts of the project related emissions, existing and projected future emissions from local PM_{2.5} sources (e.g. stationary sources, motor vehicles, and airport traffic) upon the outdoor air concentrations at the Project site. If the outdoor concentrations are determined to exceed the California and National annual average PM_{2.5} exceedence concentration of 12 µg/m³, or the National 24-hour average exceedence concentration of 35 µg/m³, then the buildings need to have a mechanical supply of outdoor air that has air filtration with sufficient removal efficiency, such that the indoor concentrations of outdoor PM_{2.5} particles is less than the California and National PM_{2.5} annual and 24-hour standards.

It is my experience that based on the projected high traffic noise levels, the annual average concentration of PM_{2.5} will exceed the California and National PM_{2.5} annual and 24-hour standards and warrant installation of high efficiency air filters (i.e. MERV 13 or higher) in all mechanically supplied outdoor air ventilation systems.

Indoor Air Quality Impact Mitigation Measures

The following are recommended mitigation measures to minimize the impacts upon indoor quality:

Indoor Formaldehyde Concentrations Mitigation. Use only composite wood materials (e.g. hardwood plywood, medium density fiberboard, particleboard) for all interior finish systems that are made with CARB approved no-added formaldehyde (NAF) resins (CARB, 2009). CARB Phase 2 certified composite wood products, or ultra-low emitting formaldehyde (ULEF) resins, do not insure indoor formaldehyde concentrations that are below the CEQA cancer risk of 10 per million. Only composite wood products manufactured with CARB approved no-added formaldehyde (NAF) resins, such as resins made from soy, polyvinyl acetate, or methylene diisocyanate can insure that the OEHHA cancer risk of 10 per million is met.

Alternatively, conduct the previously described Pre-Construction Building Material/Furnishing Chemical Emissions Assessment, to determine that the combination of formaldehyde emissions from building materials and furnishings do not create indoor formaldehyde concentrations that exceed the CEQA cancer and non-cancer health risks.

It is important to note that we are not asking that the builder “speculate” on what and how much composite materials be used, but rather at the design stage to select composite wood materials based on the formaldehyde emission rates that manufacturers routinely conduct using the California Department of Health “Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions for Indoor Sources Using Environmental Chambers”, (CDPH, 2017), and use the procedure described above (i.e. Pre-Construction Building Material/Furnishing Formaldehyde Emissions Assessment) to insure that the materials selected achieve acceptable cancer risks from material off gassing of formaldehyde.

Outdoor Air Ventilation Mitigation. Provide each habitable room with a continuous mechanical supply of outdoor air that meets or exceeds the California 2016 Building Energy Efficiency Standards (California Energy Commission, 2015) requirements of the greater of 15 cfm/occupant or 0.15 cfm/ft² of floor area. Following installation of the system conduct testing and balancing to insure that required amount of outdoor air is entering each habitable room and provide a written report documenting the outdoor airflow rates. Do not use exhaust only mechanical outdoor air systems, use only balanced outdoor air supply and exhaust systems or outdoor air supply only systems. Provide a manual for the occupants or maintenance personnel, that describes the purpose of the mechanical outdoor air system and the operation and maintenance requirements of the system.

PM_{2.5} Outdoor Air Concentration Mitigation. Install air filtration with sufficient PM_{2.5} removal efficiency (e.g. MERV 13 or higher) to filter the outdoor air entering the mechanical outdoor air supply systems, such that the indoor concentrations of outdoor PM_{2.5} particles are less than the California and National PM_{2.5} annual and 24-hour standards. Install the air filters in the system such that they are accessible for replacement by the occupants or maintenance personnel. Include in the mechanical outdoor air ventilation system manual instructions on how to replace the air filters and the estimated frequency of replacement.

References

BIFA. 2018. BIFMA Product Safety and Performance Standards and Guidelines.

www.bifma.org/page/standardsoverview

California Air Resources Board. 2009. Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products. California Environmental Protection Agency, Sacramento, CA.

<https://www.arb.ca.gov/regact/2007/compwood07/fro-final.pdf>

California Air Resources Board. 2011. Toxic Air Contaminant Identification List. California Environmental Protection Agency, Sacramento, CA. <https://www.arb.ca.gov/toxics/id/taclist.htm>

California Building Code. 2001. California Code of Regulations, Title 24, Part 2 Volume 1, Appendix Chapter 12, Interior Environment, Division 1, Ventilation, Section 1207: 2001 California Building Code, California Building Standards Commission. Sacramento, CA.

California Building Standards Commission (2014). 2013 California Green Building Standards Code. California Code of Regulations, Title 24, Part 11. California Building Standards Commission, Sacramento, CA <http://www.bsc.ca.gov/Home/CALGreen.aspx>.

California Energy Commission, PIER Program. CEC-500-2007-033. Final Report, ARB Contract 03-326. Available at: www.arb.ca.gov/research/apr/past/03-326.pdf.

California Energy Commission, 2015. 2016 Building Energy Efficiency Standards for Residential and Nonresidential Buildings, California Code of Regulations, Title 24, Part 6. <http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf>

CDPH. 2017. Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions for Indoor Sources Using Environmental Chambers, Version 1.1. California Department of Public Health, Richmond, CA. <https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHLB/IAQ/Pages/VOC.aspx>.

EPA. 2011. Exposure Factors Handbook: 2011 Edition, Chapter 16 – Activity Factors. Report EPA/600/R-09/052F, September 2011. U.S. Environmental Protection Agency, Washington, D.C.

ESA. 2021. 6007 Sunset Project – CEQA Class 32 Categorical Exemption Report.

Hodgson, A. T., D. Beal, J.E.R. McIlvaine. 2002. Sources of formaldehyde, other aldehydes and terpenes in a new manufactured house. *Indoor Air* 12: 235–242.

OEHHA (Office of Environmental Health Hazard Assessment). 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines; Guidance Manual for Preparation of Health Risk Assessments.

OEHHA (Office of Environmental Health Hazard Assessment). 2017a. Proposition 65 Safe Harbor Levels. No Significant Risk Levels for Carcinogens and Maximum Allowable Dose Levels for Chemicals Causing Reproductive Toxicity. Available at: <http://www.oehha.ca.gov/prop65/pdf/safeharbor081513.pdf>

OEHHA - Office of Environmental Health Hazard Assessment. 2017b. All OEHHA Acute, 8-hour and Chronic Reference Exposure Levels. Available at: <http://oehha.ca.gov/air/allrels.html>

Offermann, F. J. 2009. Ventilation and Indoor Air Quality in New Homes. California Air Resources Board and California Energy Commission, PIER Energy-Related Environmental Research Program. Collaborative Report. CEC-500-2009-085. <https://www.arb.ca.gov/research/apr/past/04-310.pdf>

Offermann, F. J. and A. T. Hodgson. 2011. Emission Rates of Volatile Organic Compounds in New Homes. Proceedings Indoor Air 2011 (12th International Conference on Indoor Air Quality and Climate 2011), June 5-10, 2011, Austin, TX.

Singer, B.C, Chan, W.R, Kim, Y., Offermann, F.J., and Walker I.S. 2020. Indoor Air Quality in California Homes with Code-Required Mechanical Ventilation. *Indoor Air*, Vol 30, Issue 5, 885-899.

South Coast Air Quality Management District (SCAQMD). 2015. California Environmental Quality Act Air Quality Handbook. South Coast Air Quality Management District,

Diamond Bar, CA, <http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook>

USGBC. 2014. LEED BD+C Homes v4. U.S. Green Building Council, Washington, D.C. <http://www.usgbc.org/credits/homes/v4>

APPENDIX A

INDOOR FORMALDEHYDE CONCENTRATIONS AND THE CARB FORMALDEHYDE ATCM

With respect to formaldehyde emissions from composite wood products, the CARB ATCM regulations of formaldehyde emissions from composite wood products, do not assure healthful indoor air quality. The following is the stated purpose of the CARB ATCM regulation - *The purpose of this airborne toxic control measure is to “reduce formaldehyde emissions from composite wood products, and finished goods that contain composite wood products, that are sold, offered for sale, supplied, used, or manufactured for sale in California”*. In other words, the CARB ATCM regulations do not “assure healthful indoor air quality”, but rather “reduce formaldehyde emissions from composite wood products”.

Just how much protection do the CARB ATCM regulations provide building occupants from the formaldehyde emissions generated by composite wood products? Definitely some, but certainly the regulations do not “*assure healthful indoor air quality*” when CARB Phase 2 products are utilized. As shown in the Chan 2019 study of new California homes, the median indoor formaldehyde concentration was of 22.4 $\mu\text{g}/\text{m}^3$ (18.2 ppb), which corresponds to a cancer risk of 112 per million for occupants with continuous exposure, which is more than 11 times the CEQA cancer risk of 10 per million.

Another way of looking at how much protection the CARB ATCM regulations provide building occupants from the formaldehyde emissions generated by composite wood products is to calculate the maximum number of square feet of composite wood product that can be in a residence without exceeding the CEQA cancer risk of 10 per million for occupants with continuous occupancy.

For this calculation I utilized the floor area (2,272 ft^2), the ceiling height (8.5 ft), and the number of bedrooms (4) as defined in Appendix B (New Single-Family Residence Scenario) of the Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions for Indoor Sources Using Environmental Chambers, Version 1.1, 2017, California Department of Public Health,

For the outdoor air ventilation rate I used the 2019 Title 24 code required mechanical ventilation rate (ASHRAE 62.2) of 106 cfm (180 m³/h) calculated for this model residence. For the composite wood formaldehyde emission rates I used the CARB ATCM Phase 2 rates.

The calculated maximum number of square feet of composite wood product that can be in a residence, without exceeding the CEQA cancer risk of 10 per million for occupants with continuous occupancy are as follows for the different types of regulated composite wood products.

- Medium Density Fiberboard (MDF) – 15 ft² (0.7% of the floor area), or
- Particle Board – 30 ft² (1.3% of the floor area), or
- Hardwood Plywood – 54 ft² (2.4% of the floor area), or
- Thin MDF – 46 ft² (2.0 % of the floor area).

For offices and hotels the calculated maximum amount of composite wood product (% of floor area) that can be used without exceeding the CEQA cancer risk of 10 per million for occupants, assuming 8 hours/day occupancy, and the California Mechanical Code minimum outdoor air ventilation rates are as follows for the different types of regulated composite wood products.

- Medium Density Fiberboard (MDF) – 3.6 % (offices) and 4.6% (hotel rooms), or
- Particle Board – 7.2 % (offices) and 9.4% (hotel rooms), or
- Hardwood Plywood – 13 % (offices) and 17% (hotel rooms), or
- Thin MDF – 11 % (offices) and 14 % (hotel rooms)

Clearly the CARB ATCM does not regulate the formaldehyde emissions from composite wood products such that the potentially large areas of these products, such as for flooring, baseboards, interior doors, window and door trims, and kitchen and bathroom cabinetry, could be used without causing indoor formaldehyde concentrations that result in CEQA

cancer risks that substantially exceed 10 per million for occupants with continuous occupancy.

Even composite wood products manufactured with CARB certified ultra low emitting formaldehyde (ULEF) resins do not insure that the indoor air will have concentrations of formaldehyde that meet the OEHHA cancer risks that substantially exceed 10 per million. The permissible emission rates for ULEF composite wood products are only 11-15% lower than the CARB Phase 2 emission rates. Only use of composite wood products made with no-added formaldehyde resins (NAF), such as resins made from soy, polyvinyl acetate, or methylene diisocyanate can insure that the OEHHA cancer risk of 10 per million is met.

If CARB Phase 2 compliant or ULEF composite wood products are utilized in construction, then the resulting indoor formaldehyde concentrations should be determined in the design phase using the specific amounts of each type of composite wood product, the specific formaldehyde emission rates, and the volume and outdoor air ventilation rates of the indoor spaces, and all feasible mitigation measures employed to reduce this impact (e.g. use less formaldehyde containing composite wood products and/or incorporate mechanical systems capable of higher outdoor air ventilation rates). See the procedure described earlier (i.e. Pre-Construction Building Material/Furnishing Formaldehyde Emissions Assessment) to insure that the materials selected achieve acceptable cancer risks from material off gassing of formaldehyde.

Alternatively, and perhaps a simpler approach, is to use only composite wood products (e.g. hardwood plywood, medium density fiberboard, particleboard) for all interior finish systems that are made with CARB approved no-added formaldehyde (NAF) resins.

Exhibit B



Technical Consultation, Data Analysis and
Litigation Support for the Environment

2656 29th Street, Suite 201
Santa Monica, CA 90405

Matt Hagemann, P.G, C.Hg.
(949) 887-9013
mhagemann@swape.com

Paul E. Rosenfeld, PhD
(310) 795-2335
prosenfeld@swape.com

October 18, 2021

Richard Drury
Lozeau | Drury LLP
1939 Harrison Street, Suite 150
Oakland, CA 94612

Subject: Comments on the 6007 Sunset Project

Dear Mr. Drury,

We have reviewed the April 2021 CEQA Class 32 Categorical Exemption Report (“Exemption”) for the 6007 Sunset Project (“Project”) located in the City of Los Angeles (“City”). The Project proposes to demolish 22,432-SF of existing structures, 7,033-SF of surface parking, as well as 8,598-SF of ancillary lot area, and construct 71,693-SF of residential space, comprised of 109 dwelling units, 14,671-SF of retail space, and 14,969-SF of ancillary and amenity space, as well as 240 parking spaces, on the 0.87-acre site.

Our review concludes that the Exemption fails to adequately evaluate the Project’s air quality, health risk, and greenhouse gas impacts. As a result of our findings, the proposed Project does not qualify for a Class 32 Exemption under the California Environmental Quality Act (“CEQA”) and 14 Cal. Code of Regs. 1500 et seq. (“CEQA Guidelines”) and, therefore, a full CEQA analysis must be prepared to adequately assess and mitigate the potential air quality, health risk, and greenhouse gas impacts that the Project may have on the surrounding environment.

Hazards and Hazardous Materials

Inadequate Analysis of Impacts

No Phase I Environmental Site Assessment (“ESA”) was prepared for the Project site. The preparation of a Phase I ESA is often undertaken in the preparation of CEQA documents to identify hazardous waste issues that may present impacts to the public, workers, or the environment, and which may require further investigation, including environmental sampling and cleanup. The preparation of a Phase I ESA is especially important because, according to the Exemption, one of the parcels was used for an automobile repair facility and other commercial uses (p. 4).

Standards for performing a Phase I ESA have been established by the US EPA and the American Society for Testing and Materials Standards (“ASTM”).¹ Phase I ESAs are conducted to identify conditions that would indicate a release of hazardous substances and include:

- a review of all known sites in the vicinity of the subject property that are on regulatory agency databases undergoing assessment or cleanup activities;
- an inspection;
- interviews with people knowledgeable about the property; and
- recommendations for further actions to address potential hazards.

Phase I ESAs conclude with the identification of any “recognized environmental conditions” (“RECs”) and recommendations to address such conditions. A REC is the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. If RECs are identified, then a Phase II ESA generally follows, which includes the collection of soil, soil vapor and groundwater samples, as necessary, to identify the extent of contamination and the need for cleanup to reduce exposure potential to the public.

A Phase I ESA, completed by a licensed environmental professional, is necessary for inclusion in a full CEQA analysis to identify recognized environmental conditions, if any, at the proposed Project site. If past land uses include RECs, a Phase II should be conducted to sample for residual concentrations of contaminants in soil. Any contamination that is identified above regulatory screening levels, including California Department of Toxic Substances Control Soil Screening Levels², should be further evaluated and cleaned up, if necessary, in coordination with the Regional Water Quality Control Board and the California Department of Toxic Substances Control.

Air Quality

Incorrect Reliance on Class 32 Categorical Exemption

The Exemption claims that the Project is categorically exempt pursuant to CEQA Guidelines § 15332 (p. 1). According to CEQA Guidelines § 15332, a project can only be characterized as an in-fill development and qualify for a Class 32 Categorical Exemption if “approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.” The Exemption claims that the Project would result in less-than-significant air quality impacts (p. 51-68). However, this claim is unsubstantiated, as the Project’s air quality analysis is insufficient for the following three reasons:

- (1) The Exemption relies upon an incorrect and unsubstantiated air model;
- (2) The Exemption fails to adequately evaluate the Project’s health risk impacts; and
- (3) SWAPE’s screening-level health risk assessment indicates a potentially significant health risk impact.

¹ <http://www.astm.org/Standards/E1527.htm>

² <https://dtsc.ca.gov/wp-content/uploads/sites/31/2019/04/HHRA-Note-3-June-2020-A.pdf>

1) Incorrect and Unsubstantiated Air Model

The Exemption’s air quality analysis relies on emissions calculated with CalEEMod.2016.3.2 (p. 70).³ CalEEMod provides recommended default values based on site-specific information, such as land use type, meteorological data, total lot acreage, project type and typical equipment associated with project type. If more specific project information is known, the user can change the default values and input project-specific values, but the California Environmental Quality Act (“CEQA”) requires that such changes be justified by substantial evidence. Once all of the values are inputted into the model, the Project's construction and operational emissions are calculated, and "output files" are generated. These output files disclose to the reader what parameters are utilized in calculating the Project's air pollutant emissions and make known which default values are changed as well as provide justification for the values selected.

When reviewing the Project’s CalEEMod output files, provided in the Air Quality Technical Report (“AQ Report”) and Greenhouse Gas Emissions Technical Report (“GHG Report”) as Attachment D-1 and Attachment D-2 to the Exemption, respectively, we found that several model inputs were not consistent with information disclosed in the Exemption. As a result, the Project’s construction and operational emissions are underestimated. Thus, a full CEQA analysis should be prepared to include an updated air quality analysis that adequately evaluates the impacts that construction and operation of the Project will have on local and regional air quality.

Unsubstantiated Changes to Individual Construction Phase Lengths

Review of the CalEEMod output files demonstrates that the “6007 Sunset - Construction” model includes several changes to the default individual construction phase lengths (see excerpt below) (Attachment D-1, pp. 92, 116; Attachment D-2, pp. 81).

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	104.00
tblConstructionPhase	NumDays	100.00	286.00
tblConstructionPhase	NumDays	100.00	419.00
tblConstructionPhase	NumDays	10.00	79.00
tblConstructionPhase	NumDays	2.00	79.00
tblConstructionPhase	NumDays	1.00	26.00

As a result of these changes, the model includes a construction schedule as follows (see excerpt below) (Attachment D-1, pp. 95, 119; Attachment D-2, pp. 84):

³ CAPCOA (November 2017) CalEEMod User’s Guide, http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4.

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days
1	Demolition	Demolition	3/1/2022	5/31/2022	6	79
2	Site Preparation	Site Preparation	5/1/2022	5/31/2022	6	26
3	Grading	Grading	6/1/2022	8/31/2022	6	79
4	Trenching	Trenching	6/1/2022	7/31/2022	6	52
5	Foundations	Building Construction	9/1/2022	7/31/2023	6	286
6	Building Construction	Building Construction	7/1/2023	10/31/2024	6	419
7	Architectural Coating	Architectural Coating	1/1/2024	4/30/2024	6	104

As you can see in the excerpts above, the demolition phase was increased by 115%, from the default value of 10 to 79 days; the site preparation phase was increased by 2,500%, from the default value of 1 to 26 days; the grading phase was increased by 103%, from the default value of 2 to 79 days; the foundations phase was increased by 186%, from the default value 100 to 286 days; the building construction phase was increased by 319%, from the default value of 100 to 419 days; and the architectural coating phase was increased by 1,980%, from the default value of 5 to 104 days. As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.⁴ According to the “User Entered Comments & Non-Default Data” table, the justification provided for these changes is: “see construction assumptions” (Attachment D-1, pp. 91, 115; Attachment D-2, pp. 80). Furthermore, the AQ Report and GHG Report provide the following construction schedule assumptions (see excerpt below) (Attachment D-1, pp. 73; Attachment D-2, pp. 66):

Phase	Start Date	Completion Date	Work Days
Demolition	3/1/2022	5/31/2022	79
Site Preparation	5/1/2022	5/31/2022	26
Grading/Excavation	6/1/2022	8/31/2022	79
Drainage/Utilities/Trenching	6/1/2022	7/31/2022	52
Foundations/Concrete Pour	9/1/2022	7/31/2023	286
	9/1/2022	12/31/2022	105
	1/1/2023	7/31/2023	181
Building Construction	7/1/2023	10/31/2024	419
	7/1/2023	12/31/2023	157
	1/1/2024	10/31/2024	262
Architectural Coatings	1/1/2024	4/30/2024	104

Additionally, regarding the Project’s anticipated construction schedule, the Exemption states:

“Project construction is anticipated to begin in the 1st quarter of 2022, pending Project consideration and approval, and would be completed in 2024. Construction of the Project is estimated to require approximately 26 months” (p. 14).

However, these justifications remain insufficient for two reasons.

First, while the Exemption indicates the total construction duration, the Exemption fails to mention or justify the individual construction phase lengths.

⁴ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

Second, while the AQ Report and GHG Report provide the above-mentioned construction schedule, no source is provided for the revised construction phase lengths. This is incorrect, as according to the CalEEMod User's Guide:

“CalEEMod was also designed to allow the user to change the defaults to reflect site- or project-specific information, when available, provided that the information is supported by substantial evidence as required by CEQA.”⁵

Here, as the Exemption and associated documents fail to provide substantial evidence to support the individual construction phase lengths, we cannot verify the changes.

These unsubstantiated changes present an issue, as the construction emissions are improperly spread out over a longer period of time for some phases, but not for others. According to the CalEEMod User's Guide, each construction phase is associated with different emissions activities (see excerpt below).⁶

Demolition involves removing buildings or structures.

Site Preparation involves clearing vegetation (grubbing and tree/stump removal) and removing stones and other unwanted material or debris prior to grading.

Grading involves the cut and fill of land to ensure that the proper base and slope is created for the foundation.

Building Construction involves the construction of the foundation, structures and buildings.

Architectural Coating involves the application of coatings to both the interior and exterior of buildings or structures, the painting of parking lot or parking garage striping, associated signage and curbs, and the painting of the walls or other components such as stair railings inside parking structures.

Paving involves the laying of concrete or asphalt such as in parking lots, roads, driveways, or sidewalks.

As such, by disproportionately altering the individual construction phase lengths without proper justification, the model's calculations are altered and may underestimate the Project's peak daily emissions. Thus, by including unsubstantiated changes to the default individual construction phase lengths, the model may underestimate the Project's construction-related emissions and should not be relied upon to determine Project significance.

Unsubstantiated Changes to Number of Construction Days Per Week

Review of the CalEEMod output files demonstrates that the “6007 Sunset - Construction” model includes several changes to the default number of construction days per week (see excerpt below) (Attachment D-1, pp. 92, 116; Attachment D-2, pp. 81).

⁵ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 12.

⁶ “CalEEMod User's Guide.” CAPCOA, November 2017, available at: http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 31.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00
tblConstructionPhase	NumDaysWeek	5.00	6.00

As you can see in the excerpt above, the model assumes that construction activities would occur 6 days per week, rather than the default of 5 days per week. As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.⁷ According to the “User Entered Comments and Non-Default Data” table, the justification provided for this change is: “see construction assumptions” (Attachment D-1, pp. 91, 115; Attachment D-2, pp. 80). However, review of the AQ Report and GHG Report demonstrates that the construction schedule assumptions fail to mention or justify the number of construction days per week (Attachment D-1, pp. 73; Attachment D-2, pp. 66). Furthermore, the Exemption fails to mention or justify these changes whatsoever. As such, we cannot verify the revised number of construction days per week.

These unsubstantiated changes present an issue, as increasing the number of construction days per week spreads out construction emissions over a longer period of time than is anticipated for the Project. Thus, by including unsubstantiated increases to the default number of construction days per week, the model may underestimate the Project’s peak daily construction-related emissions and should not be relied upon to determine Project significance.

Unsubstantiated Reduction to Default Acres of Grading Values

Review of the CalEEMod output files demonstrates that the “6007 Sunset - Construction” model includes manual reductions to the default acres of grading values (see excerpt below) (Attachment D-1, pp. 93, 117; Attachment D-2, pp. 82).

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	0.00	0.87
tblGrading	AcresOfGrading	13.00	0.87

As you can see in the excerpt above, the acres of grading values were cumulatively reduced by approximately 87%, from the cumulative default value of 13- to 1.74-acres.⁸ As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.⁹ According to the “User Entered Comments & Non-Default Data” table, the justification provided for this change is: “see

⁷ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

⁸ Calculated: 0.87 acres + 0.87 acres = 1.74 acres

⁹ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

construction assumptions” (Attachment D-1, pp. 92, 116; Attachment D-2, pp. 81). Furthermore, the Exemption states:

“The Project Site is located on a 0.87-acre parcel within a developed urban neighborhood in the City of Los Angeles” (p. 30).

However, these justifications are insufficient. According to the CalEEMod User’s Guide:

“[T]he dimensions (e.g., length and width) of the grading site have no impact on the calculation, only the total area to be graded. In order to properly grade a piece of land multiple passes with equipment may be required. The acres is based on the equipment list and days in grading or site preparation phase according to the anticipated maximum number of acres a given piece of equipment can pass over in an 8-hour workday.”¹⁰

Thus, as the dimensions of the Project site have no impact on the acres of grading value, we cannot verify the revised acres of grading values.

These unsubstantiated reductions present an issue, as CalEEMod uses the acres of grading value to estimate the dust emissions associated with grading.¹¹ Thus, by including unsubstantiated reductions to the default acres of grading values, the model may underestimate the Project’s construction-related emissions and should not be relied upon to determine Project significance.

Unsubstantiated Change to Gas Fireplace Values

Review of the CalEEMod output files demonstrates that the “6007 Sunset - Operations” model includes several reductions to the default gas fireplace values (see excerpt below) (Attachment D-1, pp. 140, 149; Attachment D-2, pp. 106).

Table Name	Column Name	Default Value	New Value
tblFireplaces	NumberGas	93.50	0.00

As you can see in the excerpt above, the model assumes the Project would not include any gas fireplaces. As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.¹² According to the “User Entered Comments & Non-Default Data” table, the justification provided for this change is: “see operational assumptions” (Attachment D-1, pp. 140, 149; Attachment D-2, pp. 106). However, this justification is insufficient, as the Exemption and associated documents fail to mention or justify the number of gas fireplaces whatsoever. As such, we cannot verify the revised gas fireplace value.

¹⁰ “Appendix A Calculation Details for CalEEMod.” available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 9.

¹¹ “Appendix A Calculation Details for CalEEMod.” available at: http://www.aqmd.gov/docs/default-source/caleemod/02_appendix-a2016-3-2.pdf?sfvrsn=6, p. 9.

¹² CalEEMod User’s Guide, available at: http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4, p. 2, 9.

This unsubstantiated reduction presents an issue, as CalEEMod uses the number of gas fireplaces to calculate the Project’s area-source operational emissions.¹³ Thus, by including an unsubstantiated number of gas fireplaces, the model may underestimate the Project’s area-source operational emissions and should not be relied upon to determine Project significance.

Incorrect Application of Construction-Related Mitigation Measures

Review of the CalEEMod output files demonstrates that the “6007 Sunset - Construction” model includes the following construction-related mitigation measures (see excerpt below) (Attachment D-1, pp. 96, 120; Attachment D-2, pp. 86):

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

As a result, the model includes a reduced vehicle speed of 15 miles per hour (“MPH”) (see excerpt below) (Attachment D-1, pp. 92, 116; Attachment D-2, pp. 81).

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15

As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.¹⁴ However, no justification was provided by the “User Entered Comments & Non-Default Data” table. Furthermore, regarding Project compliance with fugitive dust regulations, the Exemption states:

“During its construction phase, the Project would ensure compliance with CARB’s requirements to minimize short-term emissions from on-road and off-road diesel equipment, and with SCAQMD’s regulations such as Rule 403 for controlling fugitive dust” (p. 55).

However, the inclusion of the above-mentioned construction-related mitigation measures remain unsupported for three reasons.

First, the inclusion of the construction-related mitigation measures, based on the Project’s compliance with SCAQMD Rule 403, is unsupported. According to the Association of Environmental Professionals (“AEP”) *CEQA Portal Topic Paper* on mitigation measures:

“By definition, mitigation measures are not part of the original project design. Rather, mitigation measures are actions taken by the lead agency to reduce impacts to the environment resulting from the original project design. Mitigation measures are identified by the lead agency after the

¹³ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 40.

¹⁴ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

project has undergone environmental review and are above-and-beyond existing laws, regulations, and requirements that would reduce environmental impacts.”¹⁵

As you can see in the excerpt above, mitigation measures “are not part of the original project design” and are intended to go “above-and-beyond” existing regulatory requirements. As such, the inclusion of these measures, based solely on SCAQMD Rule 403, is unsubstantiated.

Second, according to the above-mentioned AEP report:

“While not ‘mitigation’, a good practice is to include those project design feature(s) that address environmental impacts in the mitigation monitoring and reporting program (MMRP). Often the MMRP is all that accompanies building and construction plans through the permit process. If the design features are not listed as important to addressing an environmental impact, it is easy for someone not involved in the original environmental process to approve a change to the project that could eliminate one or more of the design features without understanding the resulting environmental impact.”¹⁶

As you can see in the excerpt above, project design features (“PDFs”) that are not formally included as mitigation measures may be eliminated from the Project’s design altogether. Thus, as the above-mentioned construction-related measures are not formally included as mitigation measures, we cannot guarantee that they would be implemented, monitored, and enforced on the Project site.

Third, simply because the Exemption references SCAQMD Rule 403 does not justify the inclusion of the above-mentioned construction-related mitigation measures in the model. Specifically, according to SCAQMD Rule 403, Projects can either water unpaved roads 3 times per day, water unpaved roads 1 time per day and limit vehicle speeds to 15 mph or apply a chemical stabilizer (see excerpt below).¹⁷

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS
Unpaved Roads	<p>(4a) Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; OR</p> <p>(4b) Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR</p> <p>(4c) Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.</p>

¹⁵ “CEQA Portal Topic Paper Mitigation Measures.” AEP, February 2020, available at: <https://ceqaportal.org/tp/CEQA%20Mitigation%202020.pdf>, p. 5.

¹⁶ “CEQA Portal Topic Paper Mitigation Measures.” AEP, February 2020, available at: <https://ceqaportal.org/tp/CEQA%20Mitigation%202020.pdf>, p. 6.

¹⁷ “RULE 403. FUGITIVE DUST.” SCAQMD, June 2005, available at: <http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf>, p. 403-21, Table 2.

As you can see in the above excerpt, to simply comply with SCAQMD Rule 403, the Project may either water unpaved roads 3 times per day, water unpaved roads 1 time per day and limit vehicle speeds to 15 mph, or apply a chemical stabilizer. Thus, the “Use Soil Stabilizer,” “Water Exposed Area,” and “Reduce Vehicle Speed on Unpaved Roads” measures are not all explicitly required by SCAQMD Rule 403, and should therefore not be included in the model. By incorrectly including several construction-related mitigation measures without properly committing to their implementation, the model may underestimate the Project’s construction-related emissions and should not be relied upon to determine Project significance.

Incorrect Application of Waste-Related Operational Mitigation Measures

Review of the CalEEMod output files demonstrates that the “6007 Sunset - Operations” model includes the following waste-related operational mitigation measure (see excerpt below) (Attachment D-1, pp. 147, 156; Attachment D-2, pp. 116).

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

As previously mentioned, the CalEEMod User’s Guide requires any changes to model defaults be justified.¹⁸ According to the “User Entered Comments & Non-Default Data” table, the justification provided for the inclusion of this mitigation measure is: “City of LA, Dept of Public Works, LA Sanitation, Zero Waste Progress Report, March 2013” (Attachment D-1, pp. 139, 149; Attachment D-2, pp. 106). Furthermore, the Exemption states:

“California Integrated Waste Management Act (IWMA) of 1989 and AB 341: The IWMA mandated that State agencies develop and implement an integrated waste management plan which outlines the steps to be taken to divert at least 50 percent of their solid waste from disposal facilities. AB 341 directs CalRecycle to develop and adopt regulations for mandatory commercial recycling and sets a Statewide goal for 75 percent disposal reduction by the year 2020. While this action does not directly apply to individual projects, the Project would comply with the IWMA inasmuch as it would be served by a solid waste collection and recycling service that include mixed waste processing, and that yields waste diversion results comparable to source separation and consistent with Citywide recycling targets. According to the City of Los Angeles Zero Waste Progress Report (March 2013), the City achieved a landfill diversion rate of approximately 76 percent by year 2012” (p. 76).

However, the inclusion of the waste-related operational mitigation measure remains unsupported for two reasons.

First, even if the City has achieved a landfill diversion rate of 76% does not guarantee the same diversion rate would be achieved locally at the Project site. Furthermore, the Exemption fails to provide

¹⁸ CalEEMod User Guide, available at: <http://www.caleemod.com/>, p. 2, 9

substantial evidence or additional information regarding how the Project would actually achieve a 76% landfill diversion rate.

Second, simply being “served by a solid waste collection and recycling service” is insufficient justification for the inclusion of the waste-related operational mitigation measure. According to the above-mentioned AEP report:

“While not ‘mitigation’, a good practice is to include those project design feature(s) that address environmental impacts in the mitigation monitoring and reporting program (MMRP). Often the MMRP is all that accompanies building and construction plans through the permit process. If the design features are not listed as important to addressing an environmental impact, it is easy for someone not involved in the original environmental process to approve a change to the project that could eliminate one or more of the design features without understanding the resulting environmental impact.”¹⁹

As you can see in the excerpt above, PDFs that are not formally included as mitigation measures may be eliminated from the Project’s design altogether. Thus, as the waste-related operational measure is not formally included as a mitigation measure, we cannot guarantee that it would be implemented, monitored, and enforced on the Project site. By including a waste-related operational mitigation measure without properly committing to its implementation, the model may underestimate the Project’s operational emissions and should not be relied upon to determine Project significance.

2) Diesel Particulate Matter Health Risk Emissions Inadequately Evaluated

The Exemption concludes that the proposed Project would have a less-than-significant health risk impact without conducting a quantified construction or operational health risk analysis (“HRA”). Specifically, regarding potential health risk impacts associated with Project construction, the Exemption states:

“Temporary TAC emissions associated with DPM emissions from heavy construction equipment would occur during construction activities. [...] Given the temporary and short-term construction schedule (26 months), the Project would not result in a long-term (i.e., lifetime or 70-year) exposure as a result of construction activities.

As discussed above, the Project would be consistent with the applicable 2016 AQMP requirements for control strategies intended to reduce emissions from construction equipment and activities. The Project would comply with regulatory control measures including the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than 5 minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these would minimize emissions of TACs during construction. The nearest residential air quality sensitive receptors are the single- and multi-family residential uses adjacent on the north of the project site (closest residences being 1514 La Baig Avenue and

¹⁹ “CEQA Portal Topic Paper Mitigation Measures.” AEP, February 2020, available at: <https://ceqaportal.org/tp/CEQA%20Mitigation%202020.pdf>, p. 6.

1523 Gordon Street. Although there are sensitive receptors within 500 feet of the Project Site, compliance with regulatory control measures and the limited duration of construction activities would minimize exposures” (p. 66-67).

As demonstrated above, the Exemption concludes that the Project would result in a less-than-significant construction-related health risk impact because the short-term construction duration, consistency with the applicable 2016 AQMP requirements, and compliance with regulatory control measures would minimize toxic air contaminant (“TAC”) emissions. Furthermore, regarding potential health risk impacts associated with Project operation, the Exemption states:

“The SCAQMD recommends that operational health risk assessments be conducted for substantial sources of operational DPM (e.g., truck stops and warehouse distribution facilities that generate more than 100 trucks per day or more than 40 trucks with operating transport refrigeration units) and has provided guidance for analyzing mobile source diesel emissions. Project operations would generate only minor amounts of diesel emissions from mobile sources, such as delivery trucks and occasional maintenance activities that would not exceed 100 trucks per day or more than 40 trucks with operating transport refrigeration units. Furthermore, Project trucks would be required to comply with the applicable provisions of the CARB 13 CCR, Section 2025 (Truck and Bus regulation) to minimize and reduce PM and NOX emissions from existing diesel trucks. Therefore, Project operations would not be considered a substantial source of diesel particulates” (p. 60).

As demonstrated above, the AQ Report concludes that the Project would result in a less-than-significant operational health risk impact because Project operation would not exceed 100 trucks per day and thus not generate substantial diesel particulate matter (“DPM”) emissions. However, the AQ Report’s evaluation of the Project’s potential health risk impacts, as well as the subsequent less-than-significant impact conclusion, is incorrect for three reasons.

First, by failing to prepare a quantified construction and operational HRA, the Project is inconsistent with CEQA’s requirement to correlate the increase in emissions that the Project would generate to the adverse impacts on human health caused by those emissions. This is incorrect, as construction of the proposed Project would produce DPM emissions through the exhaust stacks of construction equipment over a potential construction period of approximately 26 months (p. 14). Furthermore, the Traffic Assessment (“TA”), provided as Appendix B to the Exemption, indicates that the Project would generate approximately 859 average daily vehicle trips, which would generate additional exhaust emissions and continue to expose nearby sensitive receptors to DPM emissions during Project operation (p. 24, Table 3). However, the Exemption fails to quantify Project-generated TACs or indicate the concentrations at which such pollutants would trigger adverse health effects. Thus, without making a reasonable effort to connect the Project’s construction-related and operational TAC emissions to the potential health risks posed to nearby receptors, the Exemption is inconsistent with CEQA’s requirement to correlate the increase in emissions generated by the Project with the potential adverse impacts on human health.

Second, the Exemption's conclusion is also inconsistent with the most recent guidance published by the Office of Health Hazard Assessment ("OEHHA"), the organization responsible for providing guidance on conducting HRAs in California, as well as local air district guidelines. OEHHA released its most recent Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments in February 2015. This guidance document describes the types of projects that warrant the preparation of an HRA. The OEHHA document recommends that all short-term projects lasting at least two months be evaluated for cancer risks to nearby sensitive receptors. As the Project's construction duration exceeds the 2-month requirement set forth by OEHHA, it is clear that the Project meets the threshold warranting a quantified HRA under OEHHA guidance. Furthermore, the OEHHA document recommends that exposure from projects lasting more than 6 months be evaluated for the duration of the project and recommends that an exposure duration of 30 years be used to estimate individual cancer risk for the maximally exposed individual resident ("MEIR"). Even though we were not provided with the expected lifetime of the Project, we can reasonably assume that the Project will operate for at least 30 years, if not more. Therefore, we recommend that health risk impacts from Project operation also be evaluated, as a 30-year exposure duration vastly exceeds the 6-month requirement set forth by OEHHA. These recommendations reflect the most recent state health risk policies, and as such, we recommend that an analysis of health risk impacts posed to nearby sensitive receptors from Project-generated DPM emissions be included in a full CEQA analysis for the Project.

Third, by claiming a less-than-significant impact without conducting a quantified construction or operational HRA for nearby, existing sensitive receptors, the Exemption fails to compare the Project's cumulative excess health risk impact to the applicable SCAQMD numeric threshold of 10 in one million.²⁰ Thus, in accordance with the most relevant guidance, an assessment of the health risk posed to nearby, existing receptors from Project construction and operation should have been conducted.

3) Screening-Level Analysis Indicates Significant Health Risk Impact

In order to conduct our screening-level risk assessment we relied upon AERSCREEN, which is a screening level air quality dispersion model.²¹ The model replaced SCREEN3, and AERSCREEN is included in the OEHHA²² and the California Air Pollution Control Officers Associated ("CAPCOA")²³ guidance as the appropriate air dispersion model for Level 2 health risk screening assessments ("HRSA"). A Level 2 HRSA utilizes a limited amount of site-specific information to generate maximum reasonable downwind concentrations of air contaminants to which nearby sensitive receptors may be exposed. If an unacceptable air quality hazard is determined to be possible using AERSCREEN, a more refined modeling approach is required prior to approval of the Project.

²⁰ "South Coast AQMD Air Quality Significance Thresholds." SCAQMD, April 2019, *available at*: <http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf>.

²¹ U.S. EPA (April 2011) AERSCREEN Released as the EPA Recommended Screening Model, http://www.epa.gov/ttn/scram/guidance/clarification/20110411_AERSCREEN_Release_Memo.pdf

²² OEHHA (February 2015) Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments, <https://oehha.ca.gov/media/downloads/crn/2015guidancemanual.pdf>.

²³ CAPCOA (July 2009) Health Risk Assessments for Proposed Land Use Projects, http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf.

We prepared a preliminary HRA of the Project’s construction and operational health risk impact to residential sensitive receptors using the annual PM₁₀ exhaust estimates from the Exemption’s CalEEMod output files. Consistent with recommendations set forth by OEHHA, we assumed residential exposure begins during the third trimester stage of life. The Exemption’s CalEEMod model indicates that construction activities will generate approximately 663 pounds of DPM over the 975-day construction period.²⁴ The AERSCREEN model relies on a continuous average emission rate to simulate maximum downward concentrations from point, area, and volume emission sources. To account for the variability in equipment usage and truck trips over Project construction, we calculated an average DPM emission rate by the following equation:

$$Emission\ Rate\ \left(\frac{grams}{second}\right) = \frac{663.3\ lbs}{975\ days} \times \frac{453.6\ grams}{lbs} \times \frac{1\ day}{24\ hours} \times \frac{1\ hour}{3,600\ seconds} = 0.00357\ g/s$$

Using this equation, we estimated a construction emission rate of 0.00357 grams per second (“g/s”). Subtracting the 975-day construction period from the total residential duration of 30 years, we assumed that after Project construction, the sensitive receptor would be exposed to the Project’s operational DPM for an additional 27.33 years. The Exemption’s operational CalEEMod emissions indicate that operational activities will generate approximately 26 pounds of DPM per year throughout operation. Applying the same equation used to estimate the construction DPM rate, we estimated the following emission rate for Project operation:

$$Emission\ Rate\ \left(\frac{grams}{second}\right) = \frac{26.1\ lbs}{365\ days} \times \frac{453.6\ grams}{lbs} \times \frac{1\ day}{24\ hours} \times \frac{1\ hour}{3,600\ seconds} = 0.000376\ g/s$$

Using this equation, we estimated an operational emission rate of 0.000376 g/s. Construction and operation were simulated as a 0.87-acre rectangular area source in AERSCREEN, with approximate dimensions of 84- by 42-meters. A release height of three meters was selected to represent the height of stacks of operational equipment and other heavy-duty vehicles, and an initial vertical dimension of one and a half meters was used to simulate instantaneous plume dispersion upon release. An urban meteorological setting was selected with model-default inputs for wind speed and direction distribution.

The AERSCREEN model generates maximum reasonable estimates of single-hour DPM concentrations from the Project Site. EPA guidance suggests that in screening procedures, the annualized average concentration of an air pollutant to be estimated by multiplying the single-hour concentration by 10%.²⁵ According to the Exemption, the nearest sensitive receptor is located approximately 50 feet from the Project site, or 15 meters (p. 35). However, review of the AERSCREEN output files demonstrates that the maximally exposed receptor is located approximately 25 meters from the Project site. Thus, the single-hour concentration estimated by AERSCREEN for Project construction is approximately 16.79 µg/m³ DPM at approximately 25 meters downwind. Multiplying this single-hour concentration by 10%, we get an annualized average concentration of 1.679 µg/m³ for Project construction at the MEIR. For Project

²⁴ See Attachment B for calculations.

²⁵ U.S. EPA (October 1992) Screening Procedures for Estimating the Air Quality Impact of Stationary Sources Revised, http://www.epa.gov/ttn/scram/guidance/guide/EPA-454R-92-019_OCR.pdf.

operation, the single-hour concentration estimated by AERSCREEN is 1.768 $\mu\text{g}/\text{m}^3$ DPM at approximately 25 meters downwind. Multiplying this single-hour concentration by 10%, we get an annualized average concentration of 0.1768 $\mu\text{g}/\text{m}^3$ for Project operation at the MEIR.

We calculated the excess cancer risk to the MEIR using applicable HRA methodologies prescribed by OEHHA, as recommended by SCAQMD.²⁶ Consistent with the 975-day construction schedule, the annualized average concentration for construction was used for the entire third trimester of pregnancy (0.25 years), infantile stage of life (0 – 2 years), and the first 0.42 years of the child stage of life (2 – 16 years). The annualized average concentration for operation was used for the remainder of the 30-year exposure period, which makes up the latter 13.58 years of the child stage of life and the entire adult stage of life (16 – 30 years).

Consistent with OEHHA guidance, as recommended by SCAQMD, we used Age Sensitivity Factors (“ASF(s)”) to account for the heightened susceptibility of young children to the carcinogenic toxicity of air pollution.^{27, 28} According to this guidance, the quantified cancer risk should be multiplied by a factor of ten during the third trimester of pregnancy and during the first two years of life (infant) as well as multiplied by a factor of three during the child stage of life (2 – 16 years). Furthermore, in accordance with guidance set forth by OEHHA, we used the 95th percentile breathing rates for infants.²⁹ Finally, consistent with OEHHA guidance, we used a Fraction of Time At Home (“FAH”) Value of 1 for the 3rd trimester and infant receptors.³⁰ We used a cancer potency factor of 1.1 (mg/kg-day)⁻¹ and an averaging time of 25,550 days. The results of our calculations are shown in the tables below.

²⁶ “Supplemental Guidelines for Submission of Rule 1200 Health Risk Assessments (HRAs).” SDAPCD, July 2019, available at: https://www.sandiegocounty.gov/content/dam/sdc/apcd/PDF/Toxics_Program/APCD_1200_Supplemental_Guidelines.pdf.

²⁷ “Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments.” OEHHA, February 2015, available at: <https://oehha.ca.gov/media/downloads/cnr/2015guidancemanual.pdf>.

²⁸ “Supplemental Guidelines for Submission of Rule 1200 Health Risk Assessments (HRAs).” SDAPCD, July 2019, available at: https://www.sandiegocounty.gov/content/dam/sdc/apcd/PDF/Toxics_Program/APCD_1200_Supplemental_Guidelines.pdf.

²⁹ SCAQMD (Jun 2015) Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics ‘Hot Spots’ Information and Assessment Act, p. 19, <http://www.aqmd.gov/docs/default-source/planning/risk-assessment/ab2588-risk-assessment-guidelines.pdf?sfvrsn=6>; see also OEHHA (Feb 2015) Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments, <https://oehha.ca.gov/media/downloads/cnr/2015guidancemanual.pdf>.

³⁰ SCAQMD (Aug 2017) Risk Assessment Procedures for Rules 1401, 1401.1, and 212, p. 7, http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1401/riskassessmentprocedures_2017_080717.pdf.

The Maximally Exposed Individual at an Existing Residential Receptor

Age Group	Emissions Source	Duration (years)	Concentration (ug/m3)	Breathing Rate (L/kg-day)	Cancer Risk (without ASFs*)	ASF	Cancer Risk (with ASFs*)
3rd Trimester	Construction	0.25	1.679	361	2.28E-06	10	2.28E-05
Infant (Age 0 - 2)	Construction	2	1.679	1090	5.52E-05	10	5.52E-04
	<i>Construction</i>	<i>0.42</i>	<i>1.679</i>	<i>572</i>	<i>6.10E-06</i>		
	<i>Operation</i>	<i>13.58</i>	<i>0.1768</i>	<i>572</i>	<i>2.07E-05</i>		
Child (Age 2 - 16)	Total	14			2.68E-05	3	8.04E-05
Adult (Age 16 - 30)	Operation	14	0.1768	261	7.11E-06	1	7.11E-06
Lifetime		30			9.13E-05		6.62E-04

* We, along with CARB and SCAQMD, recommend using the more updated and health protective 2015 OEHHA guidance, which includes ASFs.

As demonstrated in the table above, the excess cancer risks for the 3rd trimester of pregnancy, infants, children, and adults at the MEIR located approximately 25 meters away, over the course of Project construction and operation, utilizing ASFs, are approximately 22.8, 552, 80.4, and 7.11 in one million, respectively. The excess cancer risk over the course of a residential lifetime (3 years), utilizing ASFs, is approximately 662 in one million. The 3rd trimester of pregnancy, infant, child, and lifetime cancer risks exceed the SCAQMD threshold of 10 in one million, thus resulting in a potentially significant impact not previously addressed or identified by the Exemption.

Utilizing ASFs is the most conservative, health-protective analysis according to the most recent guidance by OEHHA and reflects recommendations from the air district. Results without ASFs are presented in the table above, although we do not recommend utilizing these values for health risk analysis. Regardless, the excess cancer risks for the 3rd trimester of pregnancy, infants, children, and adults at the MEIR located approximately 25 meters away, over the course of Project construction and operation, without ASFs, are approximately 2.28, 55.2, 26.8, and 7.11 in one million, respectively. The excess cancer risk over the course of a residential lifetime, without ASFs, is approximately 91.3 in one million. The infant, child, and lifetime cancer risks exceed the SCAQMD threshold of 10 in one million, thus resulting in a potentially significant impact not previously addressed or identified by the Exemption. While we recommend the use of ASFs, the Project's cancer risk without ASFs, as estimated by SWAPE, exceeds the SCAQMD threshold regardless.

An agency must include an analysis of health risks that connects the Project's air emissions with the health risk posed by those emissions. Our analysis represents a screening-level HRA, which is known to be conservative and tends to err on the side of health protection. The purpose of the screening-level construction and operational HRA shown above is to demonstrate the link between the proposed

Project’s emissions and the potential health risk. Our screening-level HRA demonstrates that construction and operation of the Project could result in a potentially significant health risk impact, when correct exposure assumptions and up-to-date, applicable guidance are used. Thus, a full CEQA analysis should be prepared, including a quantified air pollution model as well as an updated, quantified refined health risk assessment which adequately and accurately evaluates health risk impacts associated with both Project construction and operation.

Greenhouse Gas

Failure to Adequately Evaluate Greenhouse Gas Impacts

The Exemption estimates that the Project would generate net annual GHG emissions of 1,380 metric tons of carbon dioxide equivalents per year (“MT CO₂e/year”) (p. 72, Table 20).

TABLE 20
ESTIMATED OPERATIONAL GREENHOUSE GAS EMISSIONS FOR BUILDOUT YEAR (POUNDS PER DAY)^a

Source	Project (MTCO ₂ e/year)
Area	2
Electricity	373
Natural Gas	56
Mobile	833
Waste	9
Water	62
Subtotal Operations:	1,335
Amortized Construction:	44
Total Emissions:	1,380

^a Totals may not add up exactly due to rounding in the modeling calculations. Detailed emissions calculations are provided in Exhibits A and B.

SOURCE: ESA, 2021.

However, the Exemption elects not to apply a quantitative GHG threshold. Instead, the Exemption’s GHG analysis relies upon the Project’s consistency with CARB’s 2017 Climate Change Scoping Plan, SCAG’s 2016-2040 RTP/SCS, the Sustainable City pLAN 2019, and the Los Angeles Green Building Code in order to conclude that the Project would result in a less-than-significant GHG impact (p. 74-90). However, the Exemption’s GHG analysis, as well as the subsequent less-than-significant impact conclusion, is incorrect for four reasons.

- (1) The Exemption’s quantitative GHG analysis relies upon an incorrect and unsubstantiated air model;
- (2) The Exemption’s unsubstantiated air model indicates a potentially significant impact;
- (3) The Exemption fails to consider the performance-based standards under CARB’s *Scoping Plan*; and
- (4) The Exemption fails to consider the performance-based standards under SCAG’s *RTP/SCS*.

1) *Incorrect and Unsubstantiated Quantitative Analysis of Emissions*

As previously stated, the Exemption estimates that the Project would generate net annual GHG emissions of 1,380 MT CO₂e/year (p. 72, Table 20). However, the Exemption's quantitative GHG analysis is unsubstantiated. As previously discussed, when we reviewed the Project's CalEEMod output files, provided in AQ Report and GHG Report as Appendix D-1 and Appendix D-2 to the Exemption, respectively, we found that several of the values inputted into the model are not consistent with information disclosed in the Exemption. As a result, the model underestimates the Project's emissions, and the Exemption's quantitative GHG analysis should not be relied upon to determine Project significance. A full CEQA analysis should be prepared that adequately assesses the potential GHG impacts that construction and operation of the proposed Project may have on the surrounding environment.

2) *Failure to Identify a Potentially Significant GHG Impact*

In an effort to quantitatively evaluate the Project's GHG emissions, we compared the Project's GHG emissions, as estimated by the Exemption, to the SCAQMD 2035 efficiency target of 3.0 MT CO₂e/SP/year, which was calculated by applying a 40% reduction to the 2020 targets.³¹ When applying the SCAQMD 2035 efficiency target of 3.0 MT CO₂e/SP/year, the Project's incorrect and unsubstantiated air model indicates a potentially significant GHG impact.³² As previously stated, the Exemption estimates that the Project would generate net annual GHG emissions of 1,380 MT CO₂e/year (p. 72, Table 20). Furthermore, according to CAPCOA's *CEQA & Climate Change* report, service population is defined as "the sum of the number of residents and the number of jobs supported by the project."³³ The Exemption estimates that the Project would house and employ approximately 248 and 29 people, respectively (p. 59). As such, we estimate a service population of 277 people.³⁴ When dividing the Project's net annual GHG emissions, as estimated by the Exemption, by a service population of 277 people, we find that the Project would emit approximately 5.0 MT CO₂e/SP/year (see table below).³⁵

³¹ "Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #15." SCAQMD, September 2010, available at: [http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-minutes.pdf](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-minutes.pdf), p. 2.

³² "Minutes for the GHG CEQA Significance Threshold Stakeholder Working Group #15." SCAQMD, September 2010, available at: [http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-minutes.pdf](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-minutes.pdf), p. 2.

³³ CAPCOA (Jan. 2008) *CEQA & Climate Change*, p. 71-72, <http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf>.

³⁴ Calculated: 248 residents + 29 employees = 277 service population.

³⁵ Calculated: (1,380 MT CO₂e/year) / (277 service population) = (4.98 MT CO₂e/SP/year).

Greenhouse Gas Emissions per Capita, Exceedances under SCAQMD 2035 Service Population Efficiency Target	
Source	Exemption Model
Annual Emissions (MT CO ₂ e/year)	1,380
Service Population	277
Service Population Efficiency (MT CO ₂ e/SP/year)	5.0
2035 SCAQMD Target (MT CO ₂ e/SP/year)	3.0
Exceeds?	Yes

As demonstrated above, the Project’s service population efficiency value, as estimated by the Exemption’s provided net annual GHG emission estimates and service population, exceed the SCAQMD 2035 efficiency target of 3.0 MT CO₂e/SP/year, indicating a potentially significant impact not previously identified or addressed by the Exemption. As a result, the Exemption’s less-than-significant GHG impact conclusion should not be relied upon. A full CEQA analysis should be prepared, including an updated GHG analysis and incorporating additional mitigation measures to reduce the Project’s GHG emissions to less-than-significant levels.

3) Failure to Consider Performance-based Standards Under CARB’s 2017 Scoping Plan

As previously discussed, the Exemption concludes that the Project would be consistent with CARB’s 2017 Climate Change Scoping Plan (p. 74-81). However, this is incorrect, as the Exemption fails to consider the performance-based measures proposed by CARB.

i. Passenger & Light Duty VMT Per Capita Benchmarks per SB 375

In reaching the State’s long-term GHG emission reduction goals, CARB’s 2017 *Scoping Plan* explicitly cites to SB 375 and the VMT reductions anticipated under the implementation of Sustainable Community Strategies.³⁶ CARB has identified the population and daily VMT from passenger autos and light-duty vehicles at the state and county level for each year between 2010 to 2050 under a “baseline scenario” that includes “current projections of VMT included in the existing Regional Transportation Plans/Sustainable Communities Strategies (RTP/SCSs) adopted by the State’s 18 Metropolitan Planning Organizations (MPOs) pursuant to SB 375 as of 2015.”³⁷ By dividing the projected daily VMT by the population, we calculated the daily VMT per capita for each year at the state and county level for 2010 (baseline year), 2024 (Project operational year), and 2030 (target years under SB 32) (see table below).

³⁶ “California’s 2017 Climate Change Scoping Plan.” CARB, November 2017, *available at*: https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf, p. 25, 98, 101-103.

³⁷ “Supporting Calculations for 2017 Scoping Plan-Identified VMT Reductions,” Excel Sheet “Readme.” CARB, January 2019, *available at*: https://ww2.arb.ca.gov/sites/default/files/2019-01/sp_mss_vmt_calculations_jan19_0.xlsx.

2017 Scoping Plan Daily VMT Per Capita						
Los Angeles				State		
Year	Population	LDV VMT Baseline	VMT Per Capita	Population	LDV VMT Baseline	VMT Per Capita
2010	9,838,771	216,979,221.64	22.05	37,335,085	836,463,980.46	22.40
2024	10,627,846	219,237,756.72	20.63	41,994,283	926,776,780.89	22.07
2030	10,868,614	215,539,586.12	19.83	43,939,250	957,178,153.19	21.78

The below table compares the 2017 *Scoping Plan* daily VMT per capita values against the daily VMT per capita values for the Project based on the Exemption’s estimates (see table below and Attachment C).

Daily VMT Per Capita from Passenger & Light-Duty Trucks, Exceedances under 2017 Scoping Plan Performance-Based SB 375 Benchmarks	
Sources	Exemption
Daily VMT from Auto & Light-Duty Vehicles	5,672
Service Population	277
Daily VMT Per Capita	20.48
19.83 VMT (Los Angeles 2030 Projected) Exceeds?	Yes

As shown above, the Exemption’s estimates show that the Project exceeds the CARB 2017 *Scoping Plan* Los Angeles County-specific projection for 2030. Because the Exemption exceeds the CARB 2017 *Scoping Plan* performance-based daily VMT per capita projection, the Project conflicts with the CARB 2017 *Scoping Plan* and SB 375. As such, the Exemption’s claim that the proposed Project would not conflict with the CARB 2017 *Scoping Plan* is unsupported. A full CEQA analysis should be prepared for the proposed Project to provide additional information and analysis to conclude less-than-significant GHG impacts.

4) Failure to Consider Performance-based Standards under SCAG’s RTP/SCS

As previously discussed, the Exemption concludes that the Project would be consistent with SCAG’s RTP/SCS (p. 81-88). However, this is incorrect, as the Exemption fails to consider the specific performance-based goals underlying SCAG’s RTP/SCS, such as: i) daily vehicles miles traveled (“VMT”) per capita benchmarks.

i. SB 375 RTP/SCS Daily VMT Per Capita Target

Under the SCAG’s 2020 RTP/SCS, daily VMT per capita in Los Angeles County should decrease from 22.2 to 19.2 VMT during that same period.³⁸ However, the Exemption fails to consider this performance-based VMT target. In order to evaluate consistency with the RTP/SCS’s performance-based VMT reduction target, daily VMT from passenger automobile and light-duty vehicle was calculated based on the Project’s provided daily VMT estimates and the CalEEMod default fleet mix, then divided by the

³⁸ “Connect SoCal.” SCAG, September 2020, available at: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocial-plan_0.pdf?1606001176, pp. 138.

estimated service population of 277. The below table shows the daily VMT per capita for the Project based on the Exemption’s estimates (see table below and Attachment C).

Daily VMT Per Capita from Passenger & Light-Duty Trucks, Exceedances under RTP/SCS Performance-Based SB 375 Target	
Sources	Exemption
Daily VMT from Auto & Light-Duty Vehicles	5,672
Service Population	277
Daily VMT Per Capita	20.48
19.2 VMT (Los Angeles 2045 Target) Exceeded?	Yes

As shown in the above table, based on a service population of 277, the Project would result in 20.48 VMT per capita from passenger auto and light-duty truck vehicles. This exceeds the Los Angeles County-specific 2045 target under SCAG’s 2020 RTP/SCS. Thus, based on the Exemption’s estimates, the Project would exceed the 2045 target VMT per capita values for Los Angeles County, indicating that the Project conflicts with the SCAG’s RTP/SCS.

Design Features Should Be Included as Mitigation Measures

Our analysis demonstrates that the Project would result in a potentially significant health risk and GHG impact that should be mitigated further. We recommend that the Exemption implements all product design features (“PDFs”), such as the GHG reduction strategies described in the Exemption’s CARB Consistency Analysis, as formal mitigation measures (p. 77-79, Table 21). As a result, we could guarantee that these measures would be implemented, monitored, and enforced on the Project site. Including formal mitigation measures by properly committing to their implementation would result in verifiable emissions reductions that may help reduce emissions to less-than-significant levels.

Disclaimer

SWAPE has received limited discovery regarding this project. Additional information may become available in the future; thus, we retain the right to revise or amend this report when additional information becomes available. Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable environmental consultants practicing in this or similar localities at the time of service. No other warranty, expressed or implied, is made as to the scope of work, work methodologies and protocols, site conditions, analytical testing results, and findings presented. This report reflects efforts which were limited to information that was reasonably accessible at the time of the work, and may contain informational gaps, inconsistencies, or otherwise be incomplete due to the unavailability or uncertainty of information obtained or provided by third parties.

Sincerely,

A handwritten signature in blue ink that reads "Matt Hagemann". The signature is fluid and cursive.

Matt Hagemann, P.G., C.Hg.

A handwritten signature in blue ink that reads "Paul E. Rosenfeld". The signature is fluid and cursive.

Paul E. Rosenfeld, Ph.D.

- Attachment A: Health Risk Calculations
- Attachment B: AERSCREEN Output Files
- Attachment C: VMT Per Capita Calculations
- Attachment D: Matt Hagemann CV
- Attachment E: Paul E. Rosenfeld CV

Attachment A

Construction			
2022		Total	
Annual Emissions (tons/year)	0.0822	Total DPM (lbs)	663.271
Daily Emissions (lbs/day)	0.7408	Total DPM (g)	300859.7256
Construction Duration (days)	306	Total Construction Days	975
Total DPM (lbs)	226.6848	Emission Rate (g/s)	0.003571459
Total DPM (g)	102824.2253	Release Height (meters)	3
Start Date	3/1/2022	Total Acreage	0.87
End Date	1/1/2023	Max Horizontal (meters)	83.91
Construction Days	306	Min Horizontal (meters)	41.96
		Initial Vertical Dimension (meters)	1.5
		Setting	Urban
2023		Population	3,967,000
Annual Emissions (tons/year)	0.0785	Start Date	3/1/2022
Daily Emissions (lbs/day)	0.9102	End Date	10/31/2024
Construction Duration (days)	365	Total Construction Days	975
Total DPM (lbs)	332.223	Total Years of Construction	2.67
Total DPM (g)	150696.3528	Total Years of Operation	27.33
Start Date	1/1/2023		
End Date	1/1/2024		
Construction Days	365		
2024			
Annual Emissions (tons/year)	0.0402		
Daily Emissions (lbs/day)	0.3433		
Construction Duration (days)	304		
Total DPM (lbs)	104.3632		
Total DPM (g)	47339.14752		
Start Date	1/1/2024		
End Date	10/31/2024		
Construction Days	304		

Operation	
Emission Rate	
Annual Emissions (tons/year)	0.0102
Daily Emissions (lbs/day)	0.0716
Emission Rate (g/s)	0.0003759
Release Height (meters)	3
Total Acreage	0.87
Max Horizontal (meters)	83.91
Min Horizontal (meters)	41.96
Initial Vertical Dimension (meters)	1.5
Setting	Urban
Population	3,967,000
Total Pounds of DPM	
Total DPM (lbs)	26.134

Attachment B

Start date and time 10/18/21 13:22:40

AERSCREEN 16216

6007 Sunset Construction

6007 Sunset Construction

----- DATA ENTRY VALIDATION -----

METRIC

ENGLISH

** AREADATA **

Emission Rate:	0.357E-02 g/s	0.283E-01 lb/hr
Area Height:	3.00 meters	9.84 feet
Area Source Length:	83.91 meters	275.30 feet
Area Source Width:	41.96 meters	137.66 feet
Vertical Dimension:	1.50 meters	4.92 feet
Model Mode:	URBAN	
Population:	3967000	
Dist to Ambient Air:	1.0 meters	3. feet

** BUILDING DATA **

No Building Downwash Parameters

** TERRAIN DATA **

No Terrain Elevations

Source Base Elevation: 0.0 meters 0.0 feet

Probe distance: 5000. meters 16404. feet

No flagpole receptors

No discrete receptors used

** FUMIGATION DATA **

No fumigation requested

** METEOROLOGY DATA **

Min/Max Temperature: 250.0 / 310.0 K -9.7 / 98.3 Deg F

Minimum Wind Speed: 0.5 m/s

Anemometer Height: 10.000 meters

Dominant Surface Profile: Urban

Dominant Climate Type: Average Moisture

Surface friction velocity (u*): not adjusted

DEBUG OPTION ON

AERSCREEN output file:

2021.10.18_6007Sunset_Construction.out

*** AERSCREEN Run is Ready to Begin

No terrain used, AERMAP will not be run

SURFACE CHARACTERISTICS & MAKEMET

Obtaining surface characteristics...

Using AERMET seasonal surface characteristics for Urban with Average Moisture

Season	Albedo	Bo	zo
Winter	0.35	1.50	1.000
Spring	0.14	1.00	1.000
Summer	0.16	2.00	1.000
Autumn	0.18	2.00	1.000

Creating met files aerscreen_01_01.sfc & aerscreen_01_01.pfl

Creating met files aerscreen_02_01.sfc & aerscreen_02_01.pfl

Creating met files aerscreen_03_01.sfc & aerscreen_03_01.pfl

Creating met files aerscreen_04_01.sfc & aerscreen_04_01.pfl

Buildings and/or terrain present or rectangular area source, skipping probe

FLOWSECTOR started 10/18/21 13:24:14

Running AERMOD

Processing Winter

Processing surface roughness sector 1

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 0

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 5

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 10

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 15

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 20

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 25

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 7

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 30

***** WARNING MESSAGES *****

*** NONE ***

Running AERMOD

Processing Spring

Processing surface roughness sector 1

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 0

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 5

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 10

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 15

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 20

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 25

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 7

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 30

***** WARNING MESSAGES *****

*** NONE ***

Running AERMOD

Processing Summer

Processing surface roughness sector 1

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 0

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 5

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 10

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 15

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 20

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 25

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 7

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 30

***** WARNING MESSAGES *****

*** NONE ***

Running AERMOD

Processing Autumn

Processing surface roughness sector 1

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 0

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 5

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 10

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 15

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 20

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 25

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 7

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 30

***** WARNING MESSAGES *****

*** NONE ***

FLOWSECTOR ended 10/18/21 13:24:21

REFINE started 10/18/21 13:24:21

AERMOD Finishes Successfully for REFINE stage 3 Winter sector 0

***** WARNING MESSAGES *****

*** NONE ***

REFINE ended 10/18/21 13:24:22

AERSCREEN Finished Successfully

With no errors or warnings

Check log file for details

Ending date and time 10/18/21 13:24:24

Concentration	Distance	Elevation	Diag	Season/Month	Zo sector	Date	H0	U*	W*	DT/DZ	ZICNV
ZIMCH	M-O	LEN	Z0	BOWEN	ALBEDO	REF WS	HT	REF TA	HT		
0.14090E+02	1.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.16786E+02	25.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
* 0.18057E+02	43.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.15345E+02	50.00	0.00	20.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.72752E+01	75.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.46397E+01	100.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.33201E+01	125.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.25457E+01	150.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.20385E+01	175.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.16863E+01	200.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.14275E+01	225.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.12309E+01	250.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.10774E+01	275.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.95386E+00	300.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.85319E+00	325.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.76973E+00	350.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.69957E+00	375.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.63993E+00	400.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.58866E+00	425.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.54396E+00	450.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.50486E+00	475.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.47021E+00	500.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.43948E+00	525.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.41209E+00	550.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.38753E+00	575.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.36541E+00	600.00	0.00	10.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0

1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.34539E+00			625.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.32721E+00			649.99	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.31062E+00			675.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.29544E+00			700.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.28150E+00			725.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.26867E+00			750.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.25683E+00			775.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.24653E+00			800.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.23631E+00			825.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.22681E+00			850.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.21794E+00			875.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.20966E+00			900.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.20191E+00			925.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.19465E+00			950.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.18782E+00			975.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.18140E+00			1000.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.17535E+00			1025.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.16964E+00			1050.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.16424E+00			1075.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.15914E+00			1100.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.15430E+00			1125.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.14972E+00			1150.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.14536E+00			1175.00	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.14122E+00			1200.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.13728E+00			1225.00	0.00	20.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.13353E+00			1250.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.12994E+00			1275.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.				6.0

1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.12653E+00			1300.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.12326E+00			1325.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.12014E+00			1350.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.11716E+00			1375.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.11430E+00			1400.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.11155E+00			1425.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.10892E+00			1450.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.10640E+00			1475.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.10397E+00			1500.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.10165E+00			1525.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.99403E-01			1550.00	0.00	20.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.97246E-01			1574.99	0.00	25.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.95168E-01			1600.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.93166E-01			1625.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.91237E-01			1650.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.89375E-01			1675.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.87578E-01			1700.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.85842E-01			1725.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.84166E-01			1750.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.82545E-01			1775.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.80978E-01			1800.00	0.00	25.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.79461E-01			1824.99	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.77993E-01			1850.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.76572E-01			1875.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.75194E-01			1900.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.73859E-01			1924.99	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			
1.000	1.50	0.35	0.50	10.0	310.0	2.0													
0.72565E-01			1950.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0			

1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.71309E-01			1975.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.70091E-01			2000.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.68908E-01			2025.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.67759E-01			2050.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.66643E-01			2075.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.65559E-01			2100.00	0.00	20.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.64505E-01			2125.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.63480E-01			2150.00	0.00	30.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.62483E-01			2175.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.61512E-01			2200.00	0.00	20.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.60568E-01			2224.99	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.59648E-01			2250.00	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.58753E-01			2275.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.57880E-01			2300.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.57030E-01			2325.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.56202E-01			2350.00	0.00	25.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.55394E-01			2375.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.54606E-01			2400.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.53838E-01			2425.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.53087E-01			2449.99	0.00	25.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.52354E-01			2475.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.51638E-01			2500.00	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.50940E-01			2525.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.50257E-01			2550.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.49590E-01			2575.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.48938E-01			2600.00	0.00	20.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0								
0.48301E-01			2625.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0

1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.47678E-01			2650.00	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.47069E-01			2675.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.46473E-01			2700.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.45890E-01			2725.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.45320E-01			2750.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.44762E-01			2775.00	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.44216E-01			2800.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.43681E-01			2825.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.43157E-01			2850.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.42644E-01			2875.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.42142E-01			2900.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.41649E-01			2925.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.41167E-01			2950.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.40694E-01			2975.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.40230E-01			3000.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.39776E-01			3025.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.39330E-01			3050.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.38893E-01			3074.99	0.00	20.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.38464E-01			3100.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.38044E-01			3125.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.37631E-01			3150.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.37226E-01			3174.99	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.36828E-01			3200.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.36438E-01			3225.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.36055E-01			3250.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.35679E-01			3275.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.35310E-01			3300.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0

1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.34947E-01			3325.00	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.34590E-01			3350.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.34240E-01			3375.00	0.00	20.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.33896E-01			3400.00	0.00	20.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.33558E-01			3425.00	0.00	25.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.33225E-01			3450.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.32898E-01			3475.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.32577E-01			3500.00	0.00	20.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.32261E-01			3525.00	0.00	25.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.31951E-01			3550.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.31645E-01			3575.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.31345E-01			3600.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.31050E-01			3625.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.30759E-01			3650.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.30473E-01			3675.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.30191E-01			3700.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.29915E-01			3725.00	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.29642E-01			3750.00	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.29374E-01			3775.00	0.00	25.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.29110E-01			3800.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.28849E-01			3825.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.28593E-01			3850.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.28341E-01			3875.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.28093E-01			3900.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.27848E-01			3925.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.27607E-01			3950.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.27370E-01			3975.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0

1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.27136E-01			4000.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.26906E-01			4025.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.26679E-01			4050.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.26455E-01			4075.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.26235E-01			4100.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.26017E-01			4125.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.25803E-01			4150.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.25592E-01			4175.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.25384E-01			4200.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.25178E-01			4225.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.24976E-01			4250.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.24776E-01			4275.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.24580E-01			4300.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.24385E-01			4325.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.24194E-01			4350.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.24005E-01			4375.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.23818E-01			4400.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.23635E-01			4425.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.23453E-01			4450.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.23274E-01			4475.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.23097E-01			4500.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.22923E-01			4525.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.22751E-01			4550.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.22581E-01			4575.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.22413E-01			4600.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.22247E-01			4625.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.22084E-01			4650.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0

1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.21923E-01			4675.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.21763E-01			4700.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.21606E-01			4725.00	0.00	25.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.21450E-01			4750.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.21297E-01			4775.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.21145E-01			4800.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.20995E-01			4825.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.20848E-01			4850.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.20701E-01			4875.00	0.00	30.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.20557E-01			4900.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.20414E-01			4925.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.20274E-01			4950.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.20134E-01			4975.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.19997E-01			5000.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										

Start date and time 10/15/21 11:29:55

AERSCREEN 21112

6007 Sunset, Operation

6007 Sunset, Operation

----- DATA ENTRY VALIDATION -----

METRIC

ENGLISH

** AREADATA **

Emission Rate:	0.376E-03 g/s	0.298E-02 lb/hr
Area Height:	3.00 meters	9.84 feet
Area Source Length:	83.91 meters	275.30 feet
Area Source Width:	41.96 meters	137.66 feet
Vertical Dimension:	1.50 meters	4.92 feet
Model Mode:	URBAN	
Population:	3967000	
Dist to Ambient Air:	1.0 meters	3. feet

** BUILDING DATA **

No Building Downwash Parameters

** TERRAIN DATA **

No Terrain Elevations

Source Base Elevation: 0.0 meters 0.0 feet

Probe distance: 5000. meters 16404. feet

No flagpole receptors

No discrete receptors used

** FUMIGATION DATA **

No fumigation requested

** METEOROLOGY DATA **

Min/Max Temperature: 250.0 / 310.0 K -9.7 / 98.3 Deg F

Minimum Wind Speed: 0.5 m/s

Anemometer Height: 10.000 meters

Dominant Surface Profile: Urban

Dominant Climate Type: Average Moisture

Surface friction velocity (u*): not adjusted

DEBUG OPTION ON

AERSCREEN output file:

2021.10.15_Aerscreen_6007Sunset_Operation.out

*** AERSCREEN Run is Ready to Begin

No terrain used, AERMAP will not be run

SURFACE CHARACTERISTICS & MAKEMET

Obtaining surface characteristics...

Using AERMET seasonal surface characteristics for Urban with Average Moisture

Season	Albedo	Bo	zo
Winter	0.35	1.50	1.000
Spring	0.14	1.00	1.000
Summer	0.16	2.00	1.000
Autumn	0.18	2.00	1.000

Creating met files aerscreen_01_01.sfc & aerscreen_01_01.pfl

Creating met files aerscreen_02_01.sfc & aerscreen_02_01.pfl

Creating met files aerscreen_03_01.sfc & aerscreen_03_01.pfl

Creating met files aerscreen_04_01.sfc & aerscreen_04_01.pfl

Buildings and/or terrain present or rectangular area source, skipping probe

FLOWSECTOR started 10/15/21 11:33:35

Running AERMOD

Processing Winter

Processing surface roughness sector 1

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 0

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 5

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 10

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 15

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 20

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 25

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 7

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 30

***** WARNING MESSAGES *****

*** NONE ***

Running AERMOD

Processing Spring

Processing surface roughness sector 1

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 0

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 5

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 10

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 15

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 20

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 25

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 7

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 30

***** WARNING MESSAGES *****

*** NONE ***

Running AERMOD

Processing Summer

Processing surface roughness sector 1

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 0

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 5

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 10

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 15

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 20

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 25

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 7

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 30

***** WARNING MESSAGES *****

*** NONE ***

Running AERMOD

Processing Autumn

Processing surface roughness sector 1

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 0

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 5

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 10

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 15

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 20

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 6

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 25

***** WARNING MESSAGES *****

*** NONE ***

Processing wind flow sector 7

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 30

***** WARNING MESSAGES *****

*** NONE ***

FLOWSECTOR ended 10/15/21 11:33:41

REFINE started 10/15/21 11:33:41

AERMOD Finishes Successfully for REFINE stage 3 Winter sector 0

***** WARNING MESSAGES *****

*** NONE ***

REFINE ended 10/15/21 11:33:42

AERSCREEN Finished Successfully

With no errors or warnings

Check log file for details

Ending date and time 10/15/21 11:33:43

Concentration	Distance	Elevation	Diag	Season/Month	Zo sector	Date	H0	U*	W*	DT/DZ	ZICNV
ZIMCH	M-O	LEN	Z0	BOWEN	ALBEDO	REF WS	HT	REF TA	HT		
0.14840E+01	1.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.17680E+01	25.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
* 0.19019E+01	43.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.16162E+01	50.00	0.00	20.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.76627E+00	75.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.48868E+00	100.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.34969E+00	125.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.26812E+00	150.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.21470E+00	175.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.17761E+00	200.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.15035E+00	225.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.12964E+00	250.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.11348E+00	275.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.10047E+00	300.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.89863E-01	325.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.81072E-01	350.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.73683E-01	375.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.67401E-01	400.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.62001E-01	425.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.57293E-01	450.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.53175E-01	475.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.49525E-01	500.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.46289E-01	525.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.43403E-01	550.00	0.00	0.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.40817E-01	575.00	0.00	5.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0					
0.38486E-01	600.00	0.00	10.0	Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999. 21. 6.0

1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.36378E-01			625.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.34463E-01			649.99	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.32716E-01			675.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.31117E-01			700.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.29650E-01			725.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.28298E-01			750.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.27050E-01			775.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.25966E-01			800.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.24890E-01			825.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.23888E-01			850.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.22955E-01			875.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.22083E-01			900.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.21267E-01			925.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.20501E-01			950.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.19782E-01			975.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.19106E-01			1000.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.18469E-01			1025.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.17867E-01			1050.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.17299E-01			1075.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.16762E-01			1100.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.16252E-01			1125.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.15769E-01			1150.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.15310E-01			1175.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.14874E-01			1200.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.14459E-01			1225.00	0.00	20.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.14064E-01			1250.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.13686E-01			1275.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0

1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.13327E-01			1300.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.12983E-01			1325.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.12654E-01			1350.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.12339E-01			1375.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.12038E-01			1400.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.11750E-01			1425.00	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.11472E-01			1450.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.11207E-01			1475.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.10951E-01			1500.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.10706E-01			1525.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.10470E-01			1550.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.10243E-01			1575.00	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.10024E-01			1600.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.98128E-02			1625.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.96095E-02			1650.00	0.00	20.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.94134E-02			1675.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.92242E-02			1700.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.90414E-02			1725.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.88648E-02			1750.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.86941E-02			1775.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.85290E-02			1800.00	0.00	25.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.83693E-02			1824.99	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.82147E-02			1850.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.80649E-02			1875.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.79199E-02			1899.99	0.00	25.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.77793E-02			1924.99	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.76429E-02			1950.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0

1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.75107E-02			1975.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.73823E-02			2000.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.72577E-02			2025.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.71368E-02			2050.00	0.00	30.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.70192E-02			2075.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.69050E-02			2100.00	0.00	20.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.67940E-02			2124.99	0.00	25.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.66860E-02			2150.00	0.00	30.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.65810E-02			2175.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.64788E-02			2200.00	0.00	20.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.63794E-02			2225.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.62825E-02			2250.00	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.61882E-02			2275.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.60963E-02			2300.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.60068E-02			2325.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.59195E-02			2350.00	0.00	25.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.58344E-02			2375.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.57514E-02			2400.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.56705E-02			2425.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.55914E-02			2449.99	0.00	25.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.55142E-02			2475.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.54388E-02			2500.00	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.53652E-02			2525.00	0.00	20.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.52933E-02			2550.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.52231E-02			2575.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.51544E-02			2600.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.50873E-02			2625.00	0.00	20.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0

1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.50217E-02			2650.00	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.49576E-02			2675.00	0.00	25.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.48948E-02			2700.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.48334E-02			2725.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.47734E-02			2750.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.47146E-02			2775.00	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.46570E-02			2800.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.46007E-02			2825.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.45455E-02			2850.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.44915E-02			2875.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.44386E-02			2900.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.43867E-02			2925.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.43359E-02			2950.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.42861E-02			2975.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.42373E-02			3000.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.41894E-02			3025.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.41425E-02			3050.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.40964E-02			3075.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.40513E-02			3100.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.40070E-02			3125.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.39635E-02			3150.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.39208E-02			3174.99	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.38790E-02			3200.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.38379E-02			3225.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.37975E-02			3250.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.37579E-02			3275.00	0.00	20.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.37190E-02			3300.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0

1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.36808E-02			3325.00	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.36432E-02			3350.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.36063E-02			3375.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.35701E-02			3400.00	0.00	20.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.35345E-02			3425.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.34995E-02			3450.00	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.34650E-02			3475.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.34312E-02			3500.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.33979E-02			3525.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.33652E-02			3550.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.33331E-02			3575.00	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.33014E-02			3600.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.32703E-02			3625.00	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.32397E-02			3650.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.32096E-02			3675.00	0.00	20.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.31799E-02			3700.00	0.00	20.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.31508E-02			3725.00	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.31221E-02			3750.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.30938E-02			3775.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.30660E-02			3800.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.30386E-02			3825.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.30116E-02			3849.99	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.29851E-02			3875.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.29589E-02			3900.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.29331E-02			3925.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.29078E-02			3950.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0									
0.28828E-02			3975.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21. 6.0

1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.28581E-02			4000.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.28339E-02			4025.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.28100E-02			4050.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.27864E-02			4075.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.27632E-02			4100.00	0.00	25.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.27403E-02			4125.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.27177E-02			4150.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.26955E-02			4175.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.26736E-02			4200.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.26519E-02			4225.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.26306E-02			4250.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.26096E-02			4275.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.25888E-02			4300.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.25684E-02			4325.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.25482E-02			4350.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.25283E-02			4375.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.25087E-02			4400.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.24893E-02			4425.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.24702E-02			4450.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.24513E-02			4475.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.24327E-02			4500.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.24144E-02			4525.00	0.00	10.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.23962E-02			4550.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.23783E-02			4575.00	0.00	20.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.23607E-02			4600.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.23432E-02			4625.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.23260E-02			4650.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0

1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.23090E-02			4675.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.22922E-02			4700.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.22756E-02			4725.00	0.00	25.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.22593E-02			4750.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.22431E-02			4775.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.22271E-02			4800.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.22114E-02			4825.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.21958E-02			4850.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.21804E-02			4875.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.21652E-02			4900.00	0.00	5.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.21502E-02			4924.99	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.21353E-02			4950.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.21207E-02			4975.00	0.00	15.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										
0.21062E-02			5000.00	0.00	0.0		Winter	0-360	10011001	-1.30	0.043	-9.000	0.020	-999.	21.	6.0
1.000	1.50	0.35	0.50	10.0	310.0	2.0										

Attachment C

GHG CALCULATIONS: Exemption Estimates

Line (L)	Value	Unit
Total Emissions From Passenger and Light Duty Vehicles		
Daily VMT Per Capita From Passenger and Light Duty Vehicles		
1	6,218	Project Total Mitigated Daily VMT (Transportation Assessment, pp. 118)
2	91.22%	Passenger and Light-Duty VMT Fleet Mix (CalEEMod Output Tbl. 4.4, Fleet Mix)
3	5,672.06	Annual VMT from Passenger & Light-Duty Vehicles [(L1*L2)]
4	277	Service Population [248 residents + 29 employees]
5	20.48	Daily VMT Per Capita [(Calc: L3/L4)]



2656 29th Street, Suite 201
Santa Monica, CA 90405

Matt Hagemann, P.G., C.Hg.
(949) 887-9013
mhagemann@swape.com

Matthew F. Hagemann, P.G., C.Hg., QSD, QSP

**Geologic and Hydrogeologic Characterization
Investigation and Remediation Strategies
Litigation Support and Testifying Expert
Industrial Stormwater Compliance
CEQA Review**

Education:

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.

B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

Professional Certifications:

California Professional Geologist

California Certified Hydrogeologist

Qualified SWPPP Developer and Practitioner

Professional Experience:

Matt has 30 years of experience in environmental policy, contaminant assessment and remediation, stormwater compliance, and CEQA review. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) and directed efforts to improve hydrogeologic characterization and water quality monitoring. For the past 15 years, as a founding partner with SWAPE, Matt has developed extensive client relationships and has managed complex projects that include consultation as an expert witness and a regulatory specialist, and a manager of projects ranging from industrial stormwater compliance to CEQA review of impacts from hazardous waste, air quality and greenhouse gas emissions.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – 2014, 2017;
- Senior Environmental Analyst, Komex H2O Science, Inc. (2000 -- 2003);

- Executive Director, Orange Coast Watch (2001 – 2004);
- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989–1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);
- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);
- Geologist, U.S. Forest Service (1986 – 1998); and
- Geologist, Dames & Moore (1984 – 1986).

Senior Regulatory and Litigation Support Analyst:

With SWAPE, Matt’s responsibilities have included:

- Lead analyst and testifying expert in the review of over 300 environmental impact reports and negative declarations since 2003 under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, greenhouse gas emissions, and geologic hazards. Make recommendations for additional mitigation measures to lead agencies at the local and county level to include additional characterization of health risks and implementation of protective measures to reduce worker exposure to hazards from toxins and Valley Fever.
- Stormwater analysis, sampling and best management practice evaluation at more than 100 industrial facilities.
- Expert witness on numerous cases including, for example, perfluorooctanoic acid (PFOA) contamination of groundwater, MTBE litigation, air toxins at hazards at a school, CERCLA compliance in assessment and remediation, and industrial stormwater contamination.
- Technical assistance and litigation support for vapor intrusion concerns.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.

With Komex H2O Science Inc., Matt’s duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.

- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.
- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

Executive Director:

As Executive Director with Orange Coast Watch, Matt led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, Matt prepared issue papers in the areas of treatment and disinfection of wastewater and control of the discharge of grease to sewer systems. Matt actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Matt worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

Hydrogeology:

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, Matt led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities were as follows:

- Led efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiated a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identified emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, Matt developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. He used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, Matt worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted

public hearings, and responded to public comments from residents who were very concerned about the impact of designation.

- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:

- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:

- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nationwide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

Policy:

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9.

Activities included the following:

- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, *Oxygenates in Water: Critical Information and Research Needs*.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific

principles into the policy-making process.

- Established national protocol for the peer review of scientific documents.

Geology:

With the U.S. Forest Service, Matt led investigations to determine hillslope stability of areas proposed for timber harvest in the central Oregon Coast Range. Specific activities were as follows:

- Mapped geology in the field, and used aerial photographic interpretation and mathematical models to determine slope stability.
- Coordinated his research with community members who were concerned with natural resource protection.
- Characterized the geology of an aquifer that serves as the sole source of drinking water for the city of Medford, Oregon.

As a consultant with Dames and Moore, Matt led geologic investigations of two contaminated sites (later listed on the Superfund NPL) in the Portland, Oregon, area and a large hazardous waste site in eastern Oregon. Duties included the following:

- Supervised year-long effort for soil and groundwater sampling.
- Conducted aquifer tests.
- Investigated active faults beneath sites proposed for hazardous waste disposal.

Teaching:

From 1990 to 1998, Matt taught at least one course per semester at the community college and university levels:

- At San Francisco State University, held an adjunct faculty position and taught courses in environmental geology, oceanography (lab and lecture), hydrogeology, and groundwater contamination.
- Served as a committee member for graduate and undergraduate students.
- Taught courses in environmental geology and oceanography at the College of Marin.

Matt is currently a part time geology instructor at Golden West College in Huntington Beach, California where he taught from 2010 to 2014 and in 2017.

Invited Testimony, Reports, Papers and Presentations:

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Presentation to the Public Environmental Law Conference, Eugene, Oregon.

Hagemann, M.F., 2008. Disclosure of Hazardous Waste Issues under CEQA. Invited presentation to U.S. EPA Region 9, San Francisco, California.

Hagemann, M.F., 2005. Use of Electronic Databases in Environmental Regulation, Policy Making and Public Participation. Brownfields 2005, Denver, Colorado.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Nevada and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Las Vegas, NV (served on conference organizing committee).

Hagemann, M.F., 2004. Invited testimony to a California Senate committee hearing on air toxins at schools in Southern California, Los Angeles.

Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to the Ground Water and Environmental Law Conference, National Groundwater Association.

Hagemann, M.F., 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

Hagemann, M.F., 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal representatives, Parker, AZ.

Hagemann, M.F., 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

Hagemann, M.F., 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

Hagemann, M.F., 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

Hagemann, M.F., 2003. Perchlorate: A Cold War Legacy in Drinking Water. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. From Tank to Tap: A Chronology of MTBE in Groundwater. Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. A Chronology of MTBE in Groundwater and an Estimate of Costs to Address Impacts to Groundwater. Presentation to the annual meeting of the Society of Environmental Journalists.

Hagemann, M.F., 2002. An Estimate of the Cost to Address MTBE Contamination in Groundwater (and Who Will Pay). Presentation to a meeting of the National Groundwater Association.

Hagemann, M.F., 2002. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to a meeting of the U.S. EPA and State Underground Storage Tank Program managers.

Hagemann, M.F., 2001. From Tank to Tap: A Chronology of MTBE in Groundwater. Unpublished report.

Hagemann, M.F., 2001. Estimated Cleanup Cost for MTBE in Groundwater Used as Drinking Water. Unpublished report.

Hagemann, M.F., 2001. Estimated Costs to Address MTBE Releases from Leaking Underground Storage Tanks. Unpublished report.

Hagemann, M.F., and VanMouwerik, M., 1999. Potential Water Quality Concerns Related to Snowmobile Usage. Water Resources Division, National Park Service, Technical Report.

VanMouwerik, M. and **Hagemann, M.F.** 1999, Water Quality Concerns Related to Personal Watercraft Usage. Water Resources Division, National Park Service, Technical Report.

Hagemann, M.F., 1999, Is Dilution the Solution to Pollution in National Parks? The George Wright Society Biannual Meeting, Asheville, North Carolina.

Hagemann, M.F., 1997, The Potential for MTBE to Contaminate Groundwater. U.S. EPA Superfund Groundwater Technical Forum Annual Meeting, Las Vegas, Nevada.

Hagemann, M.F., and Gill, M., 1996, Impediments to Intrinsic Remediation, Moffett Field Naval Air Station, Conference on Intrinsic Remediation of Chlorinated Hydrocarbons, Salt Lake City.

Hagemann, M.F., Fukunaga, G.L., 1996, The Vulnerability of Groundwater to Anthropogenic Contaminants on the Island of Maui, Hawaii. Hawaii Water Works Association Annual Meeting, Maui, October 1996.

Hagemann, M. F., Fukunaga, G. L., 1996, Ranking Groundwater Vulnerability in Central Oahu, Hawaii. Proceedings, Geographic Information Systems in Environmental Resources Management, Air and Waste Management Association Publication VIP-61.

Hagemann, M.F., 1994. Groundwater Characterization and Clean up at Closing Military Bases in California. Proceedings, California Groundwater Resources Association Meeting.

Hagemann, M.F. and Sabol, M.A., 1993. Role of the U.S. EPA in the High Plains States Groundwater Recharge Demonstration Program. Proceedings, Sixth Biennial Symposium on the Artificial Recharge of Groundwater.

Hagemann, M.F., 1993. U.S. EPA Policy on the Technical Impracticability of the Cleanup of DNAPL-contaminated Groundwater. California Groundwater Resources Association Meeting.

Hagemann, M.F., 1992. Dense Nonaqueous Phase Liquid Contamination of Groundwater: An Ounce of Prevention... Proceedings, Association of Engineering Geologists Annual Meeting, v. 35.

Other Experience:

Selected as subject matter expert for the California Professional Geologist licensing examinations, 2009-2011.



Technical Consultation, Data Analysis and
Litigation Support for the Environment

SOIL WATER AIR PROTECTION ENTERPRISE
2656 29th Street, Suite 201
Santa Monica, California 90405
Attn: Paul Rosenfeld, Ph.D.
Mobil: (310) 795-2335
Office: (310) 452-5555
Fax: (310) 452-5550
Email: prosenfeld@swape.com

Paul Rosenfeld, Ph.D.

Principal Environmental Chemist

Chemical Fate and Transport & Air Dispersion Modeling

Risk Assessment & Remediation Specialist

Education

Ph.D. Soil Chemistry, University of Washington, 1999. Dissertation on volatile organic compound filtration.

M.S. Environmental Science, U.C. Berkeley, 1995. Thesis on organic waste economics.

B.A. Environmental Studies, U.C. Santa Barbara, 1991. Thesis on wastewater treatment.

Professional Experience

Dr. Rosenfeld has over 25 years' experience conducting environmental investigations and risk assessments for evaluating impacts to human health, property, and ecological receptors. His expertise focuses on the fate and transport of environmental contaminants, human health risk, exposure assessment, and ecological restoration. Dr. Rosenfeld has evaluated and modeled emissions from oil spills, landfills, boilers and incinerators, process stacks, storage tanks, confined animal feeding operations, industrial, military and agricultural sources, unconventional oil drilling operations, and locomotive and construction engines. His project experience ranges from monitoring and modeling of pollution sources to evaluating impacts of pollution on workers at industrial facilities and residents in surrounding communities. Dr. Rosenfeld has also successfully modeled exposure to contaminants distributed by water systems and via vapor intrusion.

Dr. Rosenfeld has investigated and designed remediation programs and risk assessments for contaminated sites containing lead, heavy metals, mold, bacteria, particulate matter, petroleum hydrocarbons, chlorinated solvents, pesticides, radioactive waste, dioxins and furans, semi- and volatile organic compounds, PCBs, PAHs, creosote, perchlorate, asbestos, per- and poly-fluoroalkyl substances (PFOA/PFOS), unusual polymers, fuel oxygenates (MTBE), among other pollutants. Dr. Rosenfeld also has experience evaluating greenhouse gas emissions from various projects and is an expert on the assessment of odors from industrial and agricultural sites, as well as the evaluation of odor nuisance impacts and technologies for abatement of odorous emissions. As a principal scientist at SWAPE, Dr. Rosenfeld directs air dispersion modeling and exposure assessments. He has served as an expert witness and testified about pollution sources causing nuisance and/or personal injury at sites and has testified as an expert witness on numerous cases involving exposure to soil, water and air contaminants from industrial, railroad, agricultural, and military sources.

Professional History:

Soil Water Air Protection Enterprise (SWAPE); 2003 to present; Principal and Founding Partner
UCLA School of Public Health; 2007 to 2011; Lecturer (Assistant Researcher)
UCLA School of Public Health; 2003 to 2006; Adjunct Professor
UCLA Environmental Science and Engineering Program; 2002-2004; Doctoral Intern Coordinator
UCLA Institute of the Environment, 2001-2002; Research Associate
Komex H₂O Science, 2001 to 2003; Senior Remediation Scientist
National Groundwater Association, 2002-2004; Lecturer
San Diego State University, 1999-2001; Adjunct Professor
Anteon Corp., San Diego, 2000-2001; Remediation Project Manager
Ogden (now Amec), San Diego, 2000-2000; Remediation Project Manager
Bechtel, San Diego, California, 1999 – 2000; Risk Assessor
King County, Seattle, 1996 – 1999; Scientist
James River Corp., Washington, 1995-96; Scientist
Big Creek Lumber, Davenport, California, 1995; Scientist
Plumas Corp., California and USFS, Tahoe 1993-1995; Scientist
Peace Corps and World Wildlife Fund, St. Kitts, West Indies, 1991-1993; Scientist

Publications:

Remy, L.L., Clay T., Byers, V., **Rosenfeld P. E.** (2019) Hospital, Health, and Community Burden After Oil Refinery Fires, Richmond, California 2007 and 2012. *Environmental Health*. 18:48

Simons, R.A., Seo, Y. **Rosenfeld, P.**, (2015) Modeling the Effect of Refinery Emission On Residential Property Value. *Journal of Real Estate Research*. 27(3):321-342

Chen, J. A, Zapata A. R., Sutherland A. J., Molmen, D.R., Chow, B. S., Wu, L. E., **Rosenfeld, P. E.**, Hesse, R. C., (2012) Sulfur Dioxide and Volatile Organic Compound Exposure To A Community In Texas City Texas Evaluated Using Aermოდ and Empirical Data. *American Journal of Environmental Science*, 8(6), 622-632.

Rosenfeld, P.E. & Feng, L. (2011). *The Risks of Hazardous Waste*. Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2011). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Agrochemical Industry*, Amsterdam: Elsevier Publishing.

Gonzalez, J., Feng, L., Sutherland, A., Waller, C., Sok, H., Hesse, R., **Rosenfeld, P.** (2010). PCBs and Dioxins/Furans in Attic Dust Collected Near Former PCB Production and Secondary Copper Facilities in Sauget, IL. *Procedia Environmental Sciences*. 113–125.

Feng, L., Wu, C., Tam, L., Sutherland, A.J., Clark, J.J., **Rosenfeld, P.E.** (2010). Dioxin and Furan Blood Lipid and Attic Dust Concentrations in Populations Living Near Four Wood Treatment Facilities in the United States. *Journal of Environmental Health*. 73(6), 34-46.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2010). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Wood and Paper Industries*. Amsterdam: Elsevier Publishing.

Cheremisinoff, N.P., & **Rosenfeld, P.E.** (2009). *Handbook of Pollution Prevention and Cleaner Production: Best Practices in the Petroleum Industry*. Amsterdam: Elsevier Publishing.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P.** (2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. *WIT Transactions on Ecology and the Environment, Air Pollution*, 123 (17), 319-327.

Tam L. K., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008). A Statistical Analysis Of Attic Dust And Blood Lipid Concentrations Of Tetrachloro-p-Dibenzodioxin (TCDD) Toxicity Equivalency Quotients (TEQ) In Two Populations Near Wood Treatment Facilities. *Organohalogen Compounds*, 70, 002252-002255.

Tam L. K., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008). Methods For Collect Samples For Assessing Dioxins And Other Environmental Contaminants In Attic Dust: A Review. *Organohalogen Compounds*, 70, 000527-000530.

Hensley, A.R. A. Scott, J. J. J. Clark, **Rosenfeld, P.E.** (2007). Attic Dust and Human Blood Samples Collected near a Former Wood Treatment Facility. *Environmental Research*. 105, 194-197.

Rosenfeld, P.E., J. J. J. Clark, A. R. Hensley, M. Suffet. (2007). The Use of an Odor Wheel Classification for Evaluation of Human Health Risk Criteria for Compost Facilities. *Water Science & Technology* 55(5), 345-357.

Rosenfeld, P. E., M. Suffet. (2007). The Anatomy Of Odour Wheels For Odours Of Drinking Water, Wastewater, Compost And The Urban Environment. *Water Science & Technology* 55(5), 335-344.

Sullivan, P. J. Clark, J.J.J., Agardy, F. J., **Rosenfeld, P.E.** (2007). *Toxic Legacy, Synthetic Toxins in the Food, Water, and Air in American Cities*. Boston Massachusetts: Elsevier Publishing

Rosenfeld, P.E., and Suffet I.H. (2004). Control of Compost Odor Using High Carbon Wood Ash. *Water Science and Technology*. 49(9),171-178.

Rosenfeld P. E., J.J. Clark, I.H. (Mel) Suffet (2004). The Value of An Odor-Quality-Wheel Classification Scheme For The Urban Environment. *Water Environment Federation's Technical Exhibition and Conference (WEFTEC) 2004*. New Orleans, October 2-6, 2004.

Rosenfeld, P.E., and Suffet, I.H. (2004). Understanding Odorants Associated With Compost, Biomass Facilities, and the Land Application of Biosolids. *Water Science and Technology*. 49(9), 193-199.

Rosenfeld, P.E., and Suffet I.H. (2004). Control of Compost Odor Using High Carbon Wood Ash, *Water Science and Technology*, 49(9), 171-178.

Rosenfeld, P. E., Grey, M. A., Sellev, P. (2004). Measurement of Biosolids Odor and Odorant Emissions from Windrows, Static Pile and Biofilter. *Water Environment Research*. 76(4), 310-315.

Rosenfeld, P.E., Grey, M and Suffet, M. (2002). Compost Demonstration Project, Sacramento California Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Integrated Waste Management Board Public Affairs Office, Publications Clearinghouse (MS-6)*, Sacramento, CA Publication #442-02-008.

Rosenfeld, P.E., and C.L. Henry. (2001). Characterization of odor emissions from three different biosolids. *Water Soil and Air Pollution*. 127(1-4), 173-191.

Rosenfeld, P.E., and Henry C. L., (2000). Wood ash control of odor emissions from biosolids application. *Journal of Environmental Quality*. 29, 1662-1668.

Rosenfeld, P.E., C.L. Henry and D. Bennett. (2001). Wastewater dewatering polymer affect on biosolids odor emissions and microbial activity. *Water Environment Research*. 73(4), 363-367.

Rosenfeld, P.E., and C.L. Henry. (2001). Activated Carbon and Wood Ash Sorption of Wastewater, Compost, and Biosolids Odorants. *Water Environment Research*, 73, 388-393.

Rosenfeld, P.E., and Henry C. L., (2001). High carbon wood ash effect on biosolids microbial activity and odor. *Water Environment Research*. 131(1-4), 247-262.

Chollack, T. and **P. Rosenfeld**. (1998). Compost Amendment Handbook For Landscaping. Prepared for and distributed by the City of Redmond, Washington State.

Rosenfeld, P. E. (1992). The Mount Liamuiga Crater Trail. *Heritage Magazine of St. Kitts*, 3(2).

Rosenfeld, P. E. (1993). High School Biogas Project to Prevent Deforestation On St. Kitts. *Biomass Users Network*, 7(1).

Rosenfeld, P. E. (1998). Characterization, Quantification, and Control of Odor Emissions From Biosolids Application To Forest Soil. Doctoral Thesis. University of Washington College of Forest Resources.

Rosenfeld, P. E. (1994). Potential Utilization of Small Diameter Trees on Sierra County Public Land. Masters thesis reprinted by the Sierra County Economic Council. Sierra County, California.

Rosenfeld, P. E. (1991). How to Build a Small Rural Anaerobic Digester & Uses Of Biogas In The First And Third World. Bachelors Thesis. University of California.

Presentations:

Rosenfeld, P.E., "The science for Perfluorinated Chemicals (PFAS): What makes remediation so hard?" Law Seminars International, (May 9-10, 2018) 800 Fifth Avenue, Suite 101 Seattle, WA.

Rosenfeld, P.E., Sutherland, A; Hesse, R.; Zapata, A. (October 3-6, 2013). Air dispersion modeling of volatile organic emissions from multiple natural gas wells in Decatur, TX. *44th Western Regional Meeting, American Chemical Society*. Lecture conducted from Santa Clara, CA.

Sok, H.L.; Waller, C.C.; Feng, L.; Gonzalez, J.; Sutherland, A.J.; Wisdom-Stack, T.; Sahai, R.K.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Atrazine: A Persistent Pesticide in Urban Drinking Water. *Urban Environmental Pollution*. Lecture conducted from Boston, MA.

Feng, L.; Gonzalez, J.; Sok, H.L.; Sutherland, A.J.; Waller, C.C.; Wisdom-Stack, T.; Sahai, R.K.; La, M.; Hesse, R.C.; **Rosenfeld, P.E.** (June 20-23, 2010). Bringing Environmental Justice to East St. Louis, Illinois. *Urban Environmental Pollution*. Lecture conducted from Boston, MA.

Rosenfeld, P.E. (April 19-23, 2009). Perfluorooctanoic Acid (PFOA) and Perfluoroactane Sulfonate (PFOS) Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*, Lecture conducted from Tuscon, AZ.

Rosenfeld, P.E. (April 19-23, 2009). Cost to Filter Atrazine Contamination from Drinking Water in the United States" Contamination in Drinking Water From the Use of Aqueous Film Forming Foams (AFFF) at Airports in the United States. *2009 Ground Water Summit and 2009 Ground Water Protection Council Spring Meeting*. Lecture conducted from Tuscon, AZ.

Wu, C., Tam, L., Clark, J., **Rosenfeld, P.** (20-22 July, 2009). Dioxin and furan blood lipid concentrations in populations living near four wood treatment facilities in the United States. Brebbia, C.A. and Popov, V., eds., *Air Pollution XVII: Proceedings of the Seventeenth International Conference on Modeling, Monitoring and Management of Air Pollution*. Lecture conducted from Tallinn, Estonia.

Rosenfeld, P. E. (October 15-18, 2007). Moss Point Community Exposure To Contaminants From A Releasing Facility. *The 23rd Annual International Conferences on Soils Sediment and Water*. Platform lecture conducted from University of Massachusetts, Amherst MA.

Rosenfeld, P. E. (October 15-18, 2007). The Repeated Trespass of Tritium-Contaminated Water Into A Surrounding Community Form Repeated Waste Spills From A Nuclear Power Plant. *The 23rd Annual International*

Conferences on Soils Sediment and Water. Platform lecture conducted from University of Massachusetts, Amherst MA.

Rosenfeld, P. E. (October 15-18, 2007). Somerville Community Exposure To Contaminants From Wood Treatment Facility Emissions. The 23rd *Annual International Conferences on Soils Sediment and Water*. Lecture conducted from University of Massachusetts, Amherst MA.

Rosenfeld P. E. (March 2007). Production, Chemical Properties, Toxicology, & Treatment Case Studies of 1,2,3-Trichloropropane (TCP). *The Association for Environmental Health and Sciences (AEHS) Annual Meeting*. Lecture conducted from San Diego, CA.

Rosenfeld P. E. (March 2007). Blood and Attic Sampling for Dioxin/Furan, PAH, and Metal Exposure in Florala, Alabama. *The AEHS Annual Meeting*. Lecture conducted from San Diego, CA.

Hensley A.R., Scott, A., **Rosenfeld P.E.**, Clark, J.J.J. (August 21 – 25, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *The 26th International Symposium on Halogenated Persistent Organic Pollutants – DIOXIN2006*. Lecture conducted from Radisson SAS Scandinavia Hotel in Oslo Norway.

Hensley A.R., Scott, A., **Rosenfeld P.E.**, Clark, J.J.J. (November 4-8, 2006). Dioxin Containing Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility. *APHA 134 Annual Meeting & Exposition*. Lecture conducted from Boston Massachusetts.

Paul Rosenfeld Ph.D. (October 24-25, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. Mealey's C8/PFOA. *Science, Risk & Litigation Conference*. Lecture conducted from The Rittenhouse Hotel, Philadelphia, PA.

Paul Rosenfeld Ph.D. (September 19, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, *Toxicology and Remediation PEMA Emerging Contaminant Conference*. Lecture conducted from Hilton Hotel, Irvine California.

Paul Rosenfeld Ph.D. (September 19, 2005). Fate, Transport, Toxicity, And Persistence of 1,2,3-TCP. *PEMA Emerging Contaminant Conference*. Lecture conducted from Hilton Hotel in Irvine, California.

Paul Rosenfeld Ph.D. (September 26-27, 2005). Fate, Transport and Persistence of PDBEs. *Mealey's Groundwater Conference*. Lecture conducted from Ritz Carlton Hotel, Marina Del Ray, California.

Paul Rosenfeld Ph.D. (June 7-8, 2005). Fate, Transport and Persistence of PFOA and Related Chemicals. *International Society of Environmental Forensics: Focus On Emerging Contaminants*. Lecture conducted from Sheraton Oceanfront Hotel, Virginia Beach, Virginia.

Paul Rosenfeld Ph.D. (July 21-22, 2005). Fate Transport, Persistence and Toxicology of PFOA and Related Perfluorochemicals. *2005 National Groundwater Association Ground Water And Environmental Law Conference*. Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

Paul Rosenfeld Ph.D. (July 21-22, 2005). Brominated Flame Retardants in Groundwater: Pathways to Human Ingestion, Toxicology and Remediation. *2005 National Groundwater Association Ground Water and Environmental Law Conference*. Lecture conducted from Wyndham Baltimore Inner Harbor, Baltimore Maryland.

Paul Rosenfeld, Ph.D. and James Clark Ph.D. and Rob Hesse R.G. (May 5-6, 2004). Tert-butyl Alcohol Liability and Toxicology, A National Problem and Unquantified Liability. *National Groundwater Association. Environmental Law Conference*. Lecture conducted from Congress Plaza Hotel, Chicago Illinois.

Paul Rosenfeld, Ph.D. (March 2004). Perchlorate Toxicology. *Meeting of the American Groundwater Trust*. Lecture conducted from Phoenix Arizona.

Hagemann, M.F., **Paul Rosenfeld, Ph.D.** and Rob Hesse (2004). Perchlorate Contamination of the Colorado River. *Meeting of tribal representatives*. Lecture conducted from Parker, AZ.

Paul Rosenfeld, Ph.D. (April 7, 2004). A National Damage Assessment Model For PCE and Dry Cleaners. *Drycleaner Symposium. California Ground Water Association*. Lecture conducted from Radison Hotel, Sacramento, California.

Rosenfeld, P. E., Grey, M., (June 2003) Two stage biofilter for biosolids composting odor control. *Seventh International In Situ And On Site Bioremediation Symposium Battelle Conference* Orlando, FL.

Paul Rosenfeld, Ph.D. and James Clark Ph.D. (February 20-21, 2003) Understanding Historical Use, Chemical Properties, Toxicity and Regulatory Guidance of 1,4 Dioxane. *National Groundwater Association. Southwest Focus Conference. Water Supply and Emerging Contaminants..* Lecture conducted from Hyatt Regency Phoenix Arizona.

Paul Rosenfeld, Ph.D. (February 6-7, 2003). Underground Storage Tank Litigation and Remediation. *California CUPA Forum*. Lecture conducted from Marriott Hotel, Anaheim California.

Paul Rosenfeld, Ph.D. (October 23, 2002) Underground Storage Tank Litigation and Remediation. *EPA Underground Storage Tank Roundtable*. Lecture conducted from Sacramento California.

Rosenfeld, P.E. and Suffet, M. (October 7- 10, 2002). Understanding Odor from Compost, *Wastewater and Industrial Processes. Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

Rosenfeld, P.E. and Suffet, M. (October 7- 10, 2002). Using High Carbon Wood Ash to Control Compost Odor. *Sixth Annual Symposium On Off Flavors in the Aquatic Environment. International Water Association*. Lecture conducted from Barcelona Spain.

Rosenfeld, P.E. and Grey, M. A. (September 22-24, 2002). Biocycle Composting For Coastal Sage Restoration. *Northwest Biosolids Management Association*. Lecture conducted from Vancouver Washington..

Rosenfeld, P.E. and Grey, M. A. (November 11-14, 2002). Using High-Carbon Wood Ash to Control Odor at a Green Materials Composting Facility. *Soil Science Society Annual Conference*. Lecture conducted from Indianapolis, Maryland.

Rosenfeld. P.E. (September 16, 2000). Two stage biofilter for biosolids composting odor control. *Water Environment Federation*. Lecture conducted from Anaheim California.

Rosenfeld. P.E. (October 16, 2000). Wood ash and biofilter control of compost odor. *Biofest*. Lecture conducted from Ocean Shores, California.

Rosenfeld, P.E. (2000). Bioremediation Using Organic Soil Amendments. *California Resource Recovery Association*. Lecture conducted from Sacramento California.

Rosenfeld, P.E., C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. *Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings*. Lecture conducted from Bellevue Washington.

Rosenfeld, P.E., and C.L. Henry. (1999). An evaluation of ash incorporation with biosolids for odor reduction. *Soil Science Society of America*. Lecture conducted from Salt Lake City Utah.

Rosenfeld, P.E., C.L. Henry, R. Harrison. (1998). Comparison of Microbial Activity and Odor Emissions from Three Different Biosolids Applied to Forest Soil. *Brown and Caldwell*. Lecture conducted from Seattle Washington.

Rosenfeld, P.E., C.L. Henry. (1998). Characterization, Quantification, and Control of Odor Emissions from Biosolids Application To Forest Soil. *Biofest*. Lecture conducted from Lake Chelan, Washington.

Rosenfeld, P.E., C.L. Henry, R. Harrison. (1998). Oat and Grass Seed Germination and Nitrogen and Sulfur Emissions Following Biosolids Incorporation With High-Carbon Wood-Ash. Water Environment Federation 12th Annual Residuals and Biosolids Management Conference Proceedings. Lecture conducted from Bellevue Washington.

Rosenfeld, P.E., C.L. Henry, R. B. Harrison, and R. Dills. (1997). Comparison of Odor Emissions From Three Different Biosolids Applied to Forest Soil. *Soil Science Society of America*. Lecture conducted from Anaheim California.

Teaching Experience:

UCLA Department of Environmental Health (Summer 2003 through 20010) Taught Environmental Health Science 100 to students, including undergrad, medical doctors, public health professionals and nurses. Course focused on the health effects of environmental contaminants.

National Ground Water Association, Successful Remediation Technologies. Custom Course in Sante Fe, New Mexico. May 21, 2002. Focused on fate and transport of fuel contaminants associated with underground storage tanks.

National Ground Water Association; Successful Remediation Technologies Course in Chicago Illinois. April 1, 2002. Focused on fate and transport of contaminants associated with Superfund and RCRA sites.

California Integrated Waste Management Board, April and May, 2001. Alternative Landfill Caps Seminar in San Diego, Ventura, and San Francisco. Focused on both prescriptive and innovative landfill cover design.

UCLA Department of Environmental Engineering, February 5, 2002. Seminar on Successful Remediation Technologies focusing on Groundwater Remediation.

University Of Washington, Soil Science Program, Teaching Assistant for several courses including: Soil Chemistry, Organic Soil Amendments, and Soil Stability.

U.C. Berkeley, Environmental Science Program Teaching Assistant for Environmental Science 10.

Academic Grants Awarded:

California Integrated Waste Management Board. \$41,000 grant awarded to UCLA Institute of the Environment. Goal: To investigate effect of high carbon wood ash on volatile organic emissions from compost. 2001.

Synagro Technologies, Corona California: \$10,000 grant awarded to San Diego State University. Goal: investigate effect of biosolids for restoration and remediation of degraded coastal sage soils. 2000.

King County, Department of Research and Technology, Washington State. \$100,000 grant awarded to University of Washington: Goal: To investigate odor emissions from biosolids application and the effect of polymers and ash on VOC emissions. 1998.

Northwest Biosolids Management Association, Washington State. \$20,000 grant awarded to investigate effect of polymers and ash on VOC emissions from biosolids. 1997.

James River Corporation, Oregon: \$10,000 grant was awarded to investigate the success of genetically engineered Poplar trees with resistance to round-up. 1996.

United State Forest Service, Tahoe National Forest: \$15,000 grant was awarded to investigating fire ecology of the Tahoe National Forest. 1995.

Kellogg Foundation, Washington D.C. \$500 grant was awarded to construct a large anaerobic digester on St. Kitts in West Indies. 1993

Deposition and/or Trial Testimony:

In the Circuit Court Of The Twentieth Judicial Circuit, St Clair County, Illinois
Martha Custer et al., Plaintiff vs. Cerro Flow Products, Inc., Defendants
Case No.: No. 0i9-L-2295
Rosenfeld Deposition, 5-14-2021
Trial, October 8-4-2021

In the Circuit Court of Cook County Illinois
Joseph Rafferty, Plaintiff vs. Consolidated Rail Corporation and National Railroad Passenger Corporation
d/b/a AMTRAK,
Case No.: No. 18-L-6845
Rosenfeld Deposition, 6-28-2021

In the United States District Court For the Northern District of Illinois
Theresa Romcoe, Plaintiff vs. Northeast Illinois Regional Commuter Railroad Corporation d/b/a METRA
Rail, Defendants
Case No.: No. 17-cv-8517
Rosenfeld Deposition, 5-25-2021

In the Superior Court of the State of Arizona In and For the Cunty of Maricopa
Mary Tryon et al., Plaintiff vs. The City of Pheonix v. Cox Cactus Farm, L.L.C., Utah Shelter Systems, Inc.
Case Number CV20127-094749
Rosenfeld Deposition: 5-7-2021

In the United States District Court for the Eastern District of Texas Beaumont Division
Robinson, Jeremy et al *Plaintiffs*, vs. CNA Insurance Company et al.
Case Number 1:17-cv-000508
Rosenfeld Deposition: 3-25-2021

In the Superior Court of the State of California, County of San Bernardino
Gary Garner, Personal Representative for the Estate of Melvin Garner vs. BNSF Railway Company.
Case No. 1720288
Rosenfeld Deposition 2-23-2021

In the Superior Court of the State of California, County of Los Angeles, Spring Street Courthouse
Benny M Rodriguez vs. Union Pacific Railroad, A Corporation, et al.
Case No. 18STCV01162
Rosenfeld Deposition 12-23-2020

In the Circuit Court of Jackson County, Missouri
Karen Cornwell, *Plaintiff*, vs. Marathon Petroleum, LP, *Defendant*.
Case No.: 1716-CV10006
Rosenfeld Deposition. 8-30-2019

In the United States District Court For The District of New Jersey
Duarte et al, *Plaintiffs*, vs. United States Metals Refining Company et. al. *Defendant*.
Case No.: 2:17-cv-01624-ES-SCM
Rosenfeld Deposition. 6-7-2019

In the United States District Court of Southern District of Texas Galveston Division
M/T Carla Maersk, *Plaintiffs*, vs. Conti 168., Schiffahrts-GMBH & Co. Bulker KG MS “Conti Perdido”
Defendant.
Case No.: 3:15-CV-00106 consolidated with 3:15-CV-00237
Rosenfeld Deposition. 5-9-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica
Carole-Taddeo-Bates et al., vs. Ifran Khan et al., Defendants
Case No.: No. BC615636
Rosenfeld Deposition, 1-26-2019

In The Superior Court of the State of California In And For The County Of Los Angeles – Santa Monica
The San Gabriel Valley Council of Governments et al. vs El Adobe Apts. Inc. et al., Defendants
Case No.: No. BC646857
Rosenfeld Deposition, 10-6-2018; Trial 3-7-19

In United States District Court For The District of Colorado
Bells et al. Plaintiff vs. The 3M Company et al., Defendants
Case No.: 1:16-cv-02531-RBJ
Rosenfeld Deposition, 3-15-2018 and 4-3-2018

In The District Court Of Regan County, Texas, 112th Judicial District
Phillip Bales et al., Plaintiff vs. Dow Agrosciences, LLC, et al., Defendants
Cause No.: 1923
Rosenfeld Deposition, 11-17-2017

In The Superior Court of the State of California In And For The County Of Contra Costa
Simons et al., Plaintiffs vs. Chevron Corporation, et al., Defendants
Cause No C12-01481
Rosenfeld Deposition, 11-20-2017

In The Circuit Court Of The Twentieth Judicial Circuit, St Clair County, Illinois
Martha Custer et al., Plaintiff vs. Cerro Flow Products, Inc., Defendants
Case No.: No. 019-L-2295
Rosenfeld Deposition, 8-23-2017

In United States District Court For The Southern District of Mississippi
Guy Manuel vs. The BP Exploration et al., Defendants
Case: No 1:19-cv-00315-RHW
Rosenfeld Deposition, 4-22-2020

In The Superior Court of the State of California, For The County of Los Angeles
Warrn Gilbert and Penny Gilbert, Plaintiff vs. BMW of North America LLC
Case No.: LC102019 (c/w BC582154)
Rosenfeld Deposition, 8-16-2017, Trail 8-28-2018

In the Northern District Court of Mississippi, Greenville Division
Brenda J. Cooper, et al., *Plaintiffs*, vs. Meritor Inc., et al., *Defendants*
Case Number: 4:16-cv-52-DMB-JVM
Rosenfeld Deposition: July 2017

In The Superior Court of the State of Washington, County of Snohomish
Michael Davis and Julie Davis et al., Plaintiff vs. Cedar Grove Composting Inc., Defendants
Case No.: No. 13-2-03987-5
Rosenfeld Deposition, February 2017
Trial, March 2017

In The Superior Court of the State of California, County of Alameda
Charles Spain., Plaintiff vs. Thermo Fisher Scientific, et al., Defendants
Case No.: RG14711115
Rosenfeld Deposition, September 2015

In The Iowa District Court In And For Poweshiek County
Russell D. Winburn, et al., Plaintiffs vs. Doug Hoksbergen, et al., Defendants
Case No.: LALA002187
Rosenfeld Deposition, August 2015

In The Circuit Court of Ohio County, West Virginia
Robert Andrews, et al. v. Antero, et al.
Civil Action NO. 14-C-30000
Rosenfeld Deposition, June 2015

In The Iowa District Court For Muscatine County
Laurie Freeman et. al. Plaintiffs vs. Grain Processing Corporation, Defendant
Case No 4980
Rosenfeld Deposition: May 2015

In the Circuit Court of the 17th Judicial Circuit, in and For Broward County, Florida
Walter Hinton, et. al. Plaintiff, vs. City of Fort Lauderdale, Florida, a Municipality, Defendant.
Case Number CACE07030358 (26)
Rosenfeld Deposition: December 2014

In the County Court of Dallas County Texas
Lisa Parr et al, *Plaintiff*, vs. Aruba et al, *Defendant*.
Case Number cc-11-01650-E
Rosenfeld Deposition: March and September 2013
Rosenfeld Trial: April 2014

In the Court of Common Pleas of Tuscarawas County Ohio
John Michael Abicht, et al., *Plaintiffs*, vs. Republic Services, Inc., et al., *Defendants*
Case Number: 2008 CT 10 0741 (Cons. w/ 2009 CV 10 0987)
Rosenfeld Deposition: October 2012

In the United States District Court for the Middle District of Alabama, Northern Division
James K. Benefield, et al., *Plaintiffs*, vs. International Paper Company, *Defendant*.
Civil Action Number 2:09-cv-232-WHA-TFM
Rosenfeld Deposition: July 2010, June 2011

In the Circuit Court of Jefferson County Alabama
Jaeonette Moss Anthony, et al., *Plaintiffs*, vs. Drummond Company Inc., et al., *Defendants*
Civil Action No. CV 2008-2076
Rosenfeld Deposition: September 2010

In the United States District Court, Western District Lafayette Division
Ackle et al., *Plaintiffs*, vs. Citgo Petroleum Corporation, et al., *Defendants*.
Case Number 2:07CV1052
Rosenfeld Deposition: July 2009



T 510.836.4200
F 510.836.4205

1939 Harrison Street, Ste. 150
Oakland, CA 94612

www.lozeaudrury.com
victoria@lozeaudrury.com

Via E-mail

May 11, 2022

Samantha Millman, President
Caroline Choe, Vice President
Helen Campbell, Commissioner
Jenna Hornstock, Commissioner
Helen Leung, Commissioner
Yvette López-Ledesma, Commissioner
Karen Mack, Commissioner
Dana Perlman, Commissioner
Renee Dake Wilson, Commissioner
Planning Commission
City of Los Angeles
200 North Spring Street
Los Angeles, CA 90012

Cecilia Lamas
Commission Executive Assistant
Planning Commission
City of Los Angeles
200 North Spring Street
Los Angeles, CA 90012
cpc@lacity.org

Department of City Planning
City of Los Angeles
200 North Spring Street
Los Angeles, CA 90012
per.planning@lacity.org

Michelle Carter
City Planning Associate
200 North Spring Street, Room #763
Los Angeles, CA 90012
michelle.carter@lacity.org

Re: Enclosed Supplemental Noise Expert Comment on the California Environmental Quality Act Class 32 (Infill Development) Categorical Exemption for the 6007 West Sunset Boulevard Project (CPC-2021-1557-DB-SPR-HCA; ENV-2021-1558-CE)

Dear Ms. Carter, Ms. Lamas, Department of City Planning, and Honorable City Planning Commissioners:

I am writing on behalf of Supporters Alliance for Environmental Responsibility (“SAFER”) regarding the California Environmental Quality Act (“CEQA”) Class 32 (In-fill Development) Categorical Exemption prepared for the 6007 West Sunset Boulevard Project (CPC-2021-1557-DB-SPR-HCA; ENV-2021-1558-CE), including all actions related or referring to the proposed construction, use, and maintenance of a new seven-story mixed-use development with 110 dwelling units and 14,657 square feet of ground floor commercial uses, with 239 automobile parking spaces provided within four levels of parking located at 6001-6023 West

Sunset Boulevard, 1503-1517 Gordon Street, and 1506-151 La Baig Avenue in Los Angeles, CA (“Project”).

As SAFER noted in its October 19, 2021 comments submitted to the City of Los Angeles (“City”), after reviewing the CEQA Class 32 (In-fill Development) Categorical Exemption Report (“CE” or “Exemption”), we concluded that the City cannot rely on the Exemption because the Project will have significant adverse environmental impacts on air quality. As evidenced by the expert comments submitted by Certified Industrial Hygienist Francis Offermann, PE, CIH, and environmental consulting firm Soil/Water/Air Protection Enterprise (“SWAPE”), the Exemption is inapplicable because (1) the Class 32 exemption does not apply on its face, and (2) the unusual circumstances exception to the exemption applies. Mr. Offermann’s comment and curriculum vitae are attached as Exhibit A and SWAPE’s comment and curriculum vitae are attached as Exhibit B to SAFER’s October 19, 2021 comments.

In addition, SAFER’s October 19, 2021 comments also concluded that the City cannot rely on the Exemption because the Project will have significant impacts relating to noise from construction activities. SAFER respectfully submits the enclosed expert comment by noise expert Derek Watry. As evidence by Mr. Watry’s expert noise comments, the Exemption is inapplicable because (1) the Class 32 exemption does not apply on its face, and (2) the unusual circumstances exception to the exemption applies. Mr. Watry’s comment and curriculum vitae are attached to this letter as Exhibit A hereto and are incorporated herein by reference in their entirety.

Mr. Watry’s expert comments constitute substantial evidence of a significant construction noise impact as a result of the Project, precluding the City from relying on a Class 32 Exemption. (See, Exhibit A, pp. 1-6.) Furthermore, as discussed in SAFER’s October 19, 2021 comment and evidence by Mr. Watry’s expert comment at Exhibit A, the fact that these significant impacts will occur constitutes an unusual circumstance, precluding the City’s reliance on an exemption. (*Id.*) Thus, an initial study and full CEQA analysis, may it be a mitigated negative declaration or environmental impact report, is required for this Project.

In conclusion, the City cannot rely on a Class 32 exemption because the Project does not meet the terms of the exemption and because the unusual circumstances exception to exemptions applies. Accordingly, the City must prepare an initial study to determine the appropriate level of environmental review to undertake pursuant to CEQA. Thank you for considering these comments.

Sincerely,



Victoria Yundt
LOZEAU | DRURY LLP

EXHIBIT A



WI #21-082

3 December 2021

Richard Drury, Esq.
Lozeau Drury LLP
1939 Harrison Street, Suite 150
Oakland, CA 94612

Subject: *6007 West Sunset Boulevard Project*
CEQA Class 32 Categorical Exemption Report
Comments on Noise Analysis

Dear Mr. Drury,

As requested, I have reviewed the noise section of the *6007 Sunset Project, CEQA Class 32 Categorical Exemption Report* ("CatEx Report", April 2021) for the subject project proposed in Los Angeles, California. The Noise section of this document is based on the associated *6007 Sunset Project, Noise and Vibration Technical Report* ("Noise Report", ESA, April 2021) which I have also reviewed. The letter presents my comments on the noise analysis and conclusions.

Wilson, Ihrig & Associates, Acoustical Consultants, has practiced exclusively in the field of acoustics since 1966. During our 55 years of operation, we have prepared hundreds of noise studies for Environmental Impact Reports and Statements. We have one of the largest technical laboratories in the acoustical consulting industry. We also regularly utilize industry-standard acoustical programs such as Environmental Noise Model (ENM), Traffic Noise Model (TNM), SoundPLAN, and CADNA. In short, we are well qualified to prepare environmental noise studies and review studies prepared by others.

Adverse Effects of Noise¹

Although the health effects of noise are not taken as seriously in the United States as they are in other countries, they are real and, in many parts of the country, pervasive.

Noise-Induced Hearing Loss. If a person is repeatedly exposed to loud noises, he or she may experience noise-induced hearing impairment or loss. In the United States, both the Occupational Health and Safety Administration (OSHA) and the National Institute for Occupational Safety and Health (NIOSH) promote standards and regulations to protect the hearing of people exposed to high levels of industrial noise.

¹ More information on these and other adverse effects of noise may be found in *Guidelines for Community Noise*, eds B Berglund, T Lindvall, and D Schwela, World Health Organization, Geneva, Switzerland, 1999. (<https://www.who.int/docstore/peh/noise/Comnoise-1.pdf>)

Speech Interference. Another common problem associated with noise is speech interference. In addition to the obvious issues that may arise from misunderstandings, speech interference also leads to problems with concentration fatigue, irritation, decreased working capacity, and automatic stress reactions. For complete speech intelligibility, the sound level of the speech should be 15 to 18 dBA higher than the background noise. Typical indoor speech levels are 45 to 50 dBA at 1 meter, so any noise above 30 dBA begins to interfere with speech intelligibility. The common reaction to higher background noise levels is to raise one's voice. If this is required persistently for long periods of time, stress reactions and irritation will likely result. The problems and irritation that are associated with speech disturbance have become more pronounced during the COVID-19 pandemic because many people find themselves and others they live with trying to work and learn simultaneously in spaces that were not designed for speech privacy.

Sleep Disturbance. Noise can disturb sleep by making it more difficult to fall asleep, by waking someone after they are asleep, or by altering their sleep stage, e.g., reducing the amount of rapid eye movement (REM) sleep. Noise exposure for people who are sleeping has also been linked to increased blood pressure, increased heart rate, increase in body movements, and other physiological effects. Not surprisingly, people whose sleep is disturbed by noise often experience secondary effects such as increased fatigue, depressed mood, and decreased work performance.

Cardiovascular and Physiological Effects. Human's bodily reactions to noise are rooted in the "fight or flight" response that evolved when many noises signaled imminent danger. These include increased blood pressure, elevated heart rate, and vasoconstriction. Prolonged exposure to acute noises can result in permanent effects such as hypertension and heart disease.

Impaired Cognitive Performance. Studies have established that noise exposure impairs people's abilities to perform complex tasks (tasks that require attention to detail or analytical processes), and it makes reading, paying attention, solving problems, and memorizing more difficult. This is why there are standards for classroom background noise levels and why offices and libraries are designed to provide quiet work environments. While sheltering-in-place during the COVID-19 pandemic, many people are finding working and learning more difficult because their home environment is not as quiet as their office or school was.

Comments on Construction Noise Analysis

The CatEx Report correctly states that in order for a project to qualify for a Class 32 Categorical Exemption construction noise must comply with the standard established in Los Angeles Municipal Code (LAMC) Section 112.05: 75 dBA at a distance of 50 ft. [CatEx Report at p. 36]

The CatEx Report utilizes the Federal Highway Administration's Roadway Construction Noise Model (RCNM) application to calculate construction noise levels. [Noise Report at p. 24] This is a commonly used and ubiquitously accepted method for such calculations. The results of the calculations without any assumption about the abatement efficacy afforded by proposed mitigation measures are never provided, not even in the appendix to the Noise Report which provides details about the construction noise calculations. [Noise Report, Exhibit B, p. B-1]. Rather, all of the calculation results are

presented with the inclusion of an assumed 12 dBA noise reduction from proposed mitigation measures. Figure 1 shows an excerpt from the Noise Report. The Leq values indicated already include the assumed 12 dBA of shielding.²

These values include the assumed 12 dBA of shielding				Loudest Equipment at 50 Feet				
Construction Phase Equipment Type	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance (ft)	Lmax	Leq	L10	Estimated Noise Shielding, dBA
Demolition					79.3	73.0		
Concrete Saw	1	90	20%	50	78.0	71.0	74	12
Dozer	1	82	40%	50	70.0	66.0	69	12
Tractor/Loader/Backhoe	2	80	25%	50	71.0	65.0	68	12
Dump/Haul Trucks	1	76	40%	150	54.5	50.5	53	12
Site Preparation					74.6	70.2		
Graders	1	85	40%	50	73.0	69.0	72	12
Tractor/Loader/Backhoe	1	80	25%	50	68.0	62.0	65	12
Dump/Haul Trucks	1	76	40%	50	64.0	60.0	63	12
Grading/Excavation					80.0	73.8		
Concrete Saw	1	90	20%	50	78.0	71.0	74	12
Auger Drill Rig	1	84	20%	50	72.0	65.0	68	12
Dozer	2	82	40%	50	73.0	69.0	72	12
Tractor/Loader/Backhoe	1	80	25%	150	58.5	52.4	55	12
Dump/Haul Trucks	1	76	40%	150	54.5	50.5	53	12

Figure 1 Excerpt of CatEx Report Showing Construction Noise Calculations

Figure 2 shows a reproduction of the Noise Report calculations to make clear that the assumed 12 dBA of shielding is included in the results reported in the CatEx Report. Without the assumed shielding, the construction noise levels are (for the phases shown) 82 to 85 dBA. The threshold of significance utilized by the CatEx Report is 75 dBA at 50 ft (LAMC Section 112.05), 7 to 10 dBA less than the calculated, unmitigated noise levels.

² "Leq" denotes the *equivalent level* which is the steady state sound level that contains the same amount of acoustical energy in a given time period as the actual time-varying sound levels. It is essentially the average noise level.

Demolition							
<u>Equipment</u>	<u>Lmax</u>	<u>Util%</u>	<u>No.</u>	<u>Distance</u>	<u>Lmax</u>	<u>Leq</u>	
Conc Saw	90.0	20%	1	50 ft	90.0	83.0	
Dozer	82.0	40%	1	50 ft	82.0	78.0	
Tractor/Loader/Backhoe	80.0	25%	2	50 ft	83.0	77.0	
Dump/Haul Trucks	76.0	40%	1	150 ft	66.5	62.5	
Unmitigated Noise Level:						85.0	
Assumed shielding:						-12.0	
Value reported in CatEx Report:						73.0	
Site Prep							
<u>Equipment</u>	<u>Lmax</u>	<u>Util%</u>	<u>No.</u>	<u>Distance</u>	<u>Lmax</u>	<u>Leq</u>	
Grader	85.0	40%	1	50 ft	85.0	81.0	
Tractor/Loader/Backhoe	80.0	25%	1	50 ft	80.0	74.0	
Dump/Haul Trucks	76.0	40%	1	50 ft	76.0	72.0	
Unmitigated Noise Level:						82.2	
Assumed shielding:						-12.0	
Value reported in CatEx Report:						70.2	
Grading/Excavation							
<u>Equipment</u>	<u>Lmax</u>	<u>Util%</u>	<u>No.</u>	<u>Distance</u>	<u>Lmax</u>	<u>Leq</u>	
Conc Saw	90.0	20%	1	50 ft	90.0	83.0	
Auger Drill Rig	84.0	20%	1	50 ft	84.0	77.0	
Dozer	82.0	40%	2	50 ft	82.0	81.0	
Tractor/Loader/Backhoe	80.0	25%	1	150 ft	70.5	64.4	
Dump/Haul Trucks	76.0	40%	1	150 ft	66.5	62.5	
Unmitigated Noise Level:						85.8	
Assumed shielding:						-12.0	
Value reported in CatEx Report:						73.8	

Figure 2 Reproduction of Noise Report Calculations

With the 12 dBA assumed reduction, all of the construction noise levels meet the Section 112.05 standard. However, there is no substantiation that the mitigation measures can or will, in fact, provide noise reduction on the order of 12 dBA. All that is said about the noise reduction is:

Construction noise levels account for noise reductions required in Section 112.05 of the LAMC. The noise-reducing Regulatory Compliance Measures include an estimated 12 dBA reduction from the use of noise barriers, equipment mufflers or sound enclosures beyond standard manufacturer specifications, substitution of less noisy equipment than assumed in the modeling analysis, or similar measures. [CatEx Report, Table 5, Footnote “a”, p. 41]

My understanding is that, under CEQA law, if a commitment to a performance specification is made in lieu of specific mitigation measures, the feasibility of that commitment must be substantiated with an analysis. That is not done here, and I do not believe that such substantiation is possible.

The CatEx Report mentions several measures that it is relying upon to reduce noise levels and render the construction noise impact less-than-significant. Following are the measures along with the reasons why they will not provide the necessary abatement:

Noise barriers

Figure 3 shows photographs of two residential buildings that have balconies that overlook the project site. The first is 1522 Gordon Street (R1 in the Noise Study) and the second is 1523 Gordon Street (R3 in the Noise Study). Because the balconies overlook the site and because the project will be built right up to the property line, there is no practical barrier that will be able to block the line-of-sight to the exhaust stacks of the diesel equipment (the primary source of noise). As such, barriers cannot be relied upon to provide any noise attenuation.

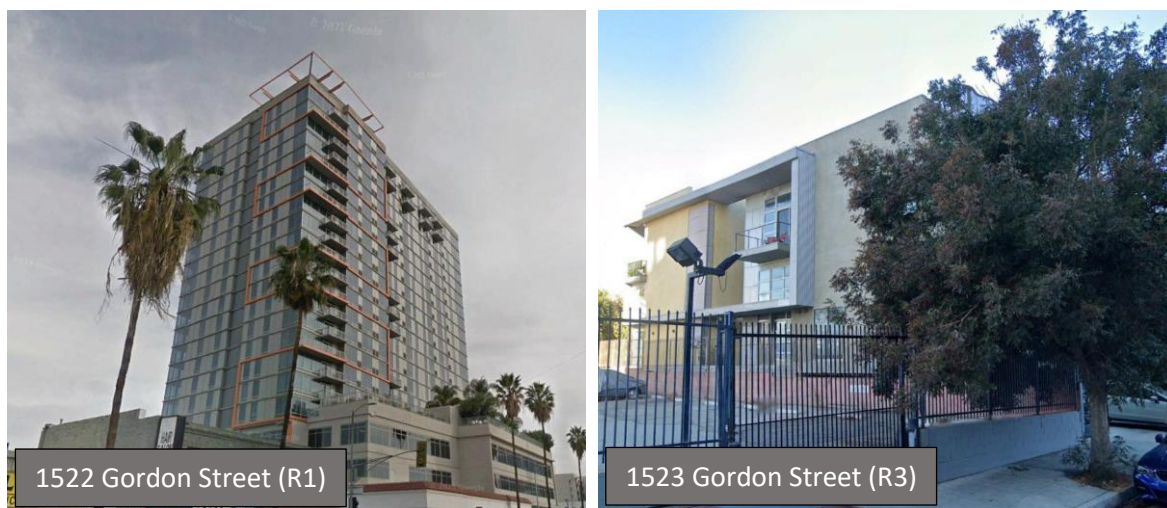


Figure 3 Neighboring Residential Buildings Overlooking the Project Site

Equipment Mufflers (beyond standard manufacturer specifications)

Construction equipment was not commonly equipped with mufflers prior to the 1970s, so requiring a muffler was a meaningful noise mitigation measure when CEQA was first passed. However, all equipment operating today in urban settings is muffled from the factory. The Noise Report uses equipment noise reference levels from the FHWA Roadway Construction Noise Model, data that was collected from the late 1990s and 2000s. All of that equipment was already muffled. I am not aware of high-performance mufflers for construction equipment, and I have never heard such equipment being installed specifically for a project. While it is undeniably a good idea to make sure all equipment has properly functioning mufflers, that is required to achieve the calculated noise levels, not reduce them. If the project sponsor asserts that high-performance mufflers are readily available, this should be substantiated with manufacturer data and certified sound tests.

Sound Enclosures

This could very well be an effective mitigation measure for small, localized tasks, but this is not practical for the majority of noise sources – heavy, diesel-powered equipment.

Substitution of Less Noisy Equipment (than assumed in the modeling analysis)

In the Noise Report calculations, the most prevalent noise source is diesel-engine-powered equipment. While Caterpillar is making progress on heavy electric-powered equipment, at this time it does not have adequate capability to replace diesel-powered equipment. Light-duty units that are being manufactured are in short supply. It is not realistic to suggest that there is adequate “less-noisy” equipment to sufficiently abate the construction noise impact.

In summary, the CatEx Report’s own noise analysis establishes that project construction will cause a significant noise impact unless abated on the order of 10 dBA. The document fails to substantiate that this is possible, and I assert that it is not given that the noise-sensitive receptors overlook the site and that the other noise reduction measures – while all laudable best practices – will be insufficient to reduce the noise levels such that they are less than the adopted threshold of significance. As such, construction noise should be identified as a significant and unavoidable impact caused by the project.

Please feel free to contact me with any questions on this review.

Very truly yours,

WILSON IHRIG

Derek L. Watry
Principal

2021-12-06_6007-sunset-catex_noise-comments_wilson-ihrig.docx