

Final Environmental Impact Report

SCH No. 2020100056

Bridge Point Rancho Cucamonga Project

City of Rancho Cucamonga, California



City of Rancho Cucamonga
10500 Civic Center Drive
Rancho Cucamonga, CA 91730

September 2021

FINAL ENVIRONMENTAL IMPACT REPORT

Bridge Point Rancho Cucamonga Project State Clearinghouse No. 2020100056

Lead Agency:

City of Rancho Cucamonga
10500 Civic Center Drive
Rancho Cucamonga, California 91730
(909) 477-2750

September 2021

TABLE OF CONTENTS

| <u>Section</u> | <u>Page</u> |
|--|--------------------|
| Section 1.0 Introduction..... | 1-1 |
| 1.1 Content and Format | 1-1 |
| 1.2 Public Review Process | 1-1 |
| 1.3 Point of Contact..... | 1-2 |
| 1.4 Project Summary..... | 1-3 |
| 1.4.1 <i>Project Location and Setting</i> | 1-3 |
| 1.4.2 <i>Proposed Project</i> | 1-3 |
| 1.4.3 <i>Project Objectives</i> | 1-4 |
| 1.4.4 <i>Required Permits and Discretionary Actions</i> | 1-4 |
| Section 2.0 Responses to Comments | 2-1 |
| 2.1 List of Persons, Organizations, and Public Agencies Commenting on The Draft EIR | 2-2 |
| 2.2 Responses to Comments | 2-2 |
| Section 3.0 Draft EIR Clarifications and Revisions | 3-1 |

ATTACHMENTS

| | |
|---|---|
| A | Attachments to Comment Letter A from Adams Broadwell Joseph & Cardozo |
| B | March 24, 1982 Staff Report for Environmental Assessment and Conditional Use Permit 82-01 – Pic “n” Save |
| C | Technical Expert Responses to Comments |

SECTION 1.0 INTRODUCTION

In accordance with Section 15088 of the Guidelines for Implementation of the California Environmental Quality Act (CEQA Guidelines), the City of Rancho Cucamonga (City), as the Lead Agency under the California Environmental Quality Act (CEQA), has evaluated the comments received on the Draft Environmental Impact Report (EIR) (State Clearinghouse [SCH] No. 2020100056) for the proposed Bridge Point Rancho Cucamonga Project (Project) and has prepared this Final EIR with written responses to these comments. The City of Rancho Cucamonga has independently reviewed, analyzed, and exercised its judgment in the analysis contained in this Final EIR and supporting documentation pursuant to Public Resources Code (PRC) Section 21082.

According to CEQA Guidelines Section 15132, the Final EIR shall consist of:

- (a) The draft EIR or a revision of the draft;
- (b) Comments and recommendations received on the draft EIR either verbatim or in summary;
- (c) A list of persons, organizations, and public agencies commenting on the draft EIR;
- (d) The responses of the Lead Agency to significant environmental points raised in the review and consultation process; and
- (e) Any other information added by the Lead Agency.

The purpose of the Final EIR is to respond to all comments received by the City regarding the environmental information and analyses contained in the Draft EIR. Additionally, any clarifications/revisions to the text, tables, figures and appendices of the Draft EIR generated from responses to comments are stated in the Final EIR, which includes the Draft EIR, as modified per the clarifications and revisions presented in Section 3.0 of this document.

In addition to the Final EIR (including supporting technical appendices), the City of Rancho Cucamonga will also consider adoption of a Mitigation Monitoring and Reporting Plan (MMRP), and a Statement of Findings of Fact, staff reports, Ordinances, and Resolutions as part of the approval process for the Project.

1.1 CONTENT AND FORMAT

Subsequent to this introductory section, Section 2 contains copies of each comment letter received by the City regarding the Draft EIR, along with annotated responses to each comment contained within the letters. Section 3, Draft EIR Clarifications and Revisions, of this document contains clarifications/revisions to the Draft EIR.

1.2 PUBLIC REVIEW PROCESS

In compliance with CEQA Guidelines Section 15201, the City has taken steps to provide opportunities for public participation in the environmental process. A Notice of Preparation (NOP) was distributed on October 2, 2020, to federal, State, regional, and local government agencies and interested parties for a 30-day public review period to solicit input on the scope of the Draft EIR and to inform agencies and the public of the Project. The Project was described; potential

environmental effects associated with Project implementation were identified; and agencies and the public were invited to review and comment on the NOP. A copy of the NOP and responses received are included in Appendix A of the Draft EIR. The City received five comment letters in response to the NOP. Draft EIR Table 2-1, Summary of NOP Comments Received, provides a brief summary of the NOP comments received addressing environmental and related issues.

The City of Rancho Cucamonga held a virtual scoping meeting for the Bridge Point Rancho Cucamonga Draft EIR on October 15, 2020, in accordance with San Bernardino County Department of Public Health requirements in effect at the time. The purpose of the meeting was to solicit input from interested agencies, individuals, and organizations regarding the Project, alternatives, mitigation measures, and significant effects to be analyzed in the EIR. In addition to City staff and Project Applicant representatives, the meeting was attended by two members of the Laborers' International Union of North America (LIUNA). The LIUNA members indicated support for the Project. No comments on the scope of the Draft EIR were raised at the public scoping meeting.

CEQA requires that a Draft EIR have a review period lasting at least 45 days for projects that have been submitted to the State Clearinghouse for review (CEQA Guidelines Section 15105[a]). The Draft EIR for the Bridge Point Rancho Cucamonga Project was released for public review on May 7, 2021, and was circulated for public review and comment for a 45-day period that ended on June 21, 2021. In compliance with CEQA Guidelines Section 15087, the City of Rancho Cucamonga provided a public Notice of Availability (NOA) of the Draft EIR at the same time it sent a Notice of Completion to the Office of Planning and Research. The City of Rancho Cucamonga used several methods to solicit comments on the Draft EIR. The NOA, which included a link to the Draft EIR and technical appendices on the City's website, was mailed to various agencies and organizations and to individuals that had previously requested such notice. The Draft EIR was electronically submitted to the State Clearinghouse for review by State agencies. The NOA was also mailed to property owners within 660 feet of the Project site and was published in the Inland Valley Daily Bulletin on May 7, 2021. Additionally, copies of the Draft EIR were available for review at the two City libraries (Archibald Library and Paul A. Biane Library) and at the City Planning Department.

As further discussed in Section 2.1 of this Final EIR, one comment letter was received by the City during the Draft EIR public review period, and two comment letters were received after the end of the public review period. All of the comment letters received by the City have been included and responded to within this Final EIR. Comments contained in the letters that address environmental issues are thoroughly responded to in Section 2.0.

1.3 POINT OF CONTACT

The Lead Agency for this Project is the City of Rancho Cucamonga. Any questions or comments regarding the preparation of this document, its assumptions, or its conclusions, should be referred to:

Mr. Sean McPherson, Senior Planner
City of Rancho Cucamonga Planning Department
10500 Civic Center Drive
Rancho Cucamonga, California 91730
Phone: (909) 477-2750 • e-mail: sean.mcpherson@cityofrc.us

1.4 PROJECT SUMMARY

The following information is summarized from the Project Description in the Draft EIR. For additional detail regarding the Project characteristics, along with analyses of the Project's potential environmental impacts, please refer to Draft EIR Sections 3.0 and 4.0, respectively.

1.4.1 PROJECT LOCATION AND SETTING

The approximately 91.4 gross acre Project site is located at 12434 4th Street, in the City of Rancho Cucamonga, San Bernardino County, California. The Project site comprises Assessor Parcel Numbers (APNs) 0229-283-50 and -51. The Project site is bounded by 4th Street to the south (which is also the jurisdictional boundary between the City of Rancho Cucamonga and the City of Ontario) and 6th Street to the north, and generally located between Etiwanda Avenue to the east and Santa Anita Avenue to the west. The Project site is located approximately 0.5-mile east of Interstate (I)-15 and 0.7-mile north of I-10.

The southern portion of the Project site is currently occupied by a 23,240 square foot (sf) retail building, a 1,431,000-sf warehouse building, and associated facilities. There are existing surface parking lots (auto and truck trailer) and vacant land (previously a vineyard) in the northern portion of the Project site.

1.4.2 PROPOSED PROJECT

The Project includes redevelopment of the Project site with two new contemporary warehouse buildings (Buildings 1 and 2) with a combined building area, including the mezzanine space, of approximately 2,175,000 sf consisting of 2,134,000 sf of warehouse uses and 41,000 square feet of ancillary office space. There would be approximately 2,136,200 sf of ground level floor space and approximately 38,800 sf of mezzanine. For purposes of analysis, it is assumed that up to 90% of the building square footage would consist of a high-cube warehouse, and 10% would consist of a high-cube cold storage warehouse. Following is a brief description of the individual buildings.

- **Building 1** would include approximately 1,422,500 sf of floor area (approximately 25,000 sf of ancillary office space and 1,397,500 sf of warehouse space). Building 1 is a cross-dock building, meaning that loading docks are located on opposite sides of the building; Building 1 provides loading docks on the east and west sides of the building.
- **Building 2** would include approximately 752,500 sf of floor area (approximately 16,000 sf of ancillary office space and 736,500 sf of warehouse space). The building would also include 16,000 sf of office within either the ground level or mezzanine. Building 2 also is a cross-dock building and provides loading docks on the north and south sides of the building.

The Project includes construction of a new public roadways referred to as Street "A", which would extend north-south along the eastern boundary of the Project site between 4th Street and 6th Street. Additional on-site improvements associated with the Project include, but are not limited to, surface parking areas (automobile and truck trailer spaces ancillary to operation of the two buildings), vehicle drive aisles, landscaping, storm water quality/storage, utility infrastructure, and exterior lighting. The Project site is within a Transit Priority Area and would include improvements

to 4th Street and 6th Street along the Project site's frontage to facilitate the use of transit and non-vehicular circulation (removal and replacement of the existing sidewalk and the installation of Class II bikeways adjacent to the Project site). Sidewalks would also be installed along proposed Street A. The City plans to construct an at-grade crossing of the railroad spur to complete 6th Street between Santa Anita Avenue and Etiwanda Avenue; this roadway improvement has also been evaluated. It is expected that construction of the Project (except for the City's construction of the at-grade crossing) would be initiated in 2021 and be complete by 2022. Anticipated approvals and permits are discussed below.

1.4.3 PROJECT OBJECTIVES

The objectives of the Project include the following:

1. Ensure that development of the Project site is accomplished consistent with applicable goals and policies of the City of Rancho Cucamonga as set forth in the Rancho Cucamonga General Plan.
2. Maximize redevelopment of the existing underutilized Project site and generate increased property tax revenue for the City of Rancho Cucamonga in order to support the City's ongoing municipal operations.
3. Maximize development of Class A high-cube warehouse industrial buildings in the City of Rancho Cucamonga that are designed to meet contemporary industry standards for operational design criteria, can accommodate a wide variety of users, and are economically competitive with similar industrial buildings in the local area and region.
4. Create employment-generating businesses in the City of Rancho Cucamonga to reduce the need for members of the local workforce to commute outside the area for employment, and to improve the jobs to housing balance.
5. Develop a project with an architectural design and operational characteristics that complement other existing buildings in the immediate vicinity and minimize conflicts with other nearby land uses.
6. Maximize industrial warehouse buildings in close proximity to an already-established industrial area, designated truck routes, and the State highway system in order to avoid or shorten truck-trip lengths on other roadways, and avoid locating industrial warehouse buildings in close proximity to residential uses.
7. Develop properties that have access to available infrastructure, including roads and utilities to be used as part of the Southern California supply chain and goods movement network.

1.4.4 REQUIRED PERMITS AND DISCRETIONARY ACTIONS

The Final EIR identifies known State, regional, and local government approvals needed for construction and/or operation of the Project. A list of the anticipated actions under City of Rancho Cucamonga jurisdiction is provided in Table 1-1, Project Related Approvals/Permits. In addition, discretionary and/or administrative actions may be necessary from other government agencies to fully implement the Project are also identified.

Concurrent with preparation of the Bridge Point Rancho Cucamonga Project Draft EIR, the City of Rancho Cucamonga was processing Ordinance No. 982, which includes amendments to Title 17 of the Rancho Cucamonga Municipal Code to modify administrative procedures and development standards within the Development Code for industrial development within the City. The Planning Commission hearing for Ordinance No. 982 was held on May 26, 2021, during public circulation of the Project's Draft EIR, and Ordinance No. 982 was adopted by the City Council on July 21, 2021. Ordinance No. 982 became effective on August 20, 2021. Among other things, Ordinance No. 982 renamed the pre-existing General Industrial (GI) zone as the Neo-Industrial (NI) zone. While the Project applications were processed pursuant to the zoning regulations in effect when the Project's applications were deemed completed (March 11, 2021), the Project's zone change request is being updated to reflect the NI zoning designation currently in effect. The NI zone continues to allow for the Project's proposed uses. Construction and operational activities evaluated in the Draft EIR would not change under the new NI zoning. Therefore, no changes to the environmental analysis conducted for the Project are required to address the application of the City's new zoning designation.

Ordinance No. 982 also requires a Minor Use Permit for "E-Commerce Distribution/Fulfillment Center, Large" in the NI zoning district, as outlined in Table 17.30.030-1 of the Development Code, Allowed Land Uses and Permit Requirements by Base Zoning District. A request for a Minor Use Permit has therefore been added to the Project's requested approvals. A Minor Use Permit evaluates whether there are any special considerations in the design or operation of a proposed use that are necessary to ensure compatibility with surrounding or potential future uses. Here, as already analyzed throughout the Draft EIR, the Project has been designed such that the use of the proposed warehouse buildings is compatible with the current and future uses in the area. Given that the Project is being built on a speculative basis, the EIR assumes that various types of warehouse uses would operate out of the Project's two buildings, including e-commerce, distribution, and fulfillment. The Minor Use Permit would only permit the use that has previously been considered as a potential use for the Project in the EIR.

**TABLE 1-1
PROJECT-RELATED APPROVALS/PERMITS**

| Public Agency | Approvals and Decisions |
|---|---|
| City of Rancho Cucamonga | |
| <i>Discretionary Approvals</i> | |
| Planning Commission and/or City Council | <ul style="list-style-type: none"> • Approve, conditionally approve, or deny: <ul style="list-style-type: none"> ○ General Plan Amendment ○ Zoning Map Amendment ○ Site Plan and Architectural Review (DRC2020-00202) ○ Minor Use Permit for proposed large E-commerce distribution/fulfillment center uses ○ Tentative Parcel Map No. 20271 ○ Development Agreement ○ Tree Removal Permit • Certify the Project's EIR along with appropriate CEQA Findings. |
| <i>Subsequent Discretionary and Ministerial Approvals</i> | |
| City of Rancho Cucamonga | <ul style="list-style-type: none"> • Approve Grading Plans and Issue Permits • Approve Final Maps • Approve Building Plans and Issue Permits • Issue Landscape Permits • Approve Street Improvement Plans and Issue Permits. • Approve Infrastructure Plans and Issue Permits • Approve Encroachment Permits for Construction Activities in the Public Right-of-Way • Approve Night-time Construction Activities • Accept Public Right-of-Way Dedications • Approve the Final Water Quality Management Plan (WQMP) prepared in accordance with National Pollutant Discharge Elimination System (NPDES) Permit requirements. |
| Responsible and Other Agencies/Entities – Subsequent Approvals and Permits | |
| California Public Utilities Commission (CPUC) | <ul style="list-style-type: none"> • Approval of the 6th Street at-grade crossing of the BNSF railroad spur |
| State Water Resources Control Board | <ul style="list-style-type: none"> • Coverage under the statewide general National Pollutant Discharge Elimination System (NPDES) for stormwater discharges from construction sites |
| South Coast Air Quality Management District | <ul style="list-style-type: none"> • Issuance of permits to construct and/or permits to operate new stationary sources of equipment that emit or control air contaminants, such as HVAC units |
| City of Ontario | <ul style="list-style-type: none"> • Approval of encroachment permit for 4th Street intersection improvements and traffic signal modifications. |
| Utility Service Providers | <ul style="list-style-type: none"> • Issuance of permits and associated approvals, as necessary for the installation of on-site new utility infrastructure or connections to existing facilities. |

Bridge Point Rancho Cucamonga Project
Final Environmental Impact Report

| Public Agency | Approvals and Decisions |
|----------------------------------|---|
| Burlington North Santa Fe (BNSF) | <ul style="list-style-type: none">Approval of the 6th Street at-grade crossing of the BNSF railroad spur |

SECTION 2.0 RESPONSES TO COMMENTS

Three comment letters were received by the City during the Draft EIR public review period, and have been included and responded to in this Final EIR. Pursuant to CEQA Guidelines Section 15088(a), comments that address significant environmental issues have been responded to. Comments that do not require a response include those that (1) do not address the adequacy or completeness of the Draft EIR; (2) do not raise significant environmental issues; or (3) do request the incorporation of additional information not relevant to environmental issues.

Specifically, Section 15088 of the CEQA Guidelines, Evaluation of and Response to Comments, states:

- a) The lead agency shall evaluate comments on environmental issues received from persons who reviewed the draft EIR and shall prepare a written response. The lead agency shall respond to comments raising significant environmental issues received during the noticed comment period and any extensions and may respond to late comments.
- b) The lead agency shall provide a written proposed response, either in a printed copy or in an electronic format, to a public agency on comments made by that public agency at least 10 days prior to certifying an environmental impact report.
- b) The written responses shall describe the disposition of significant environmental issues raised (e.g., revisions to the proposed project to mitigate anticipated impacts or objections). In particular, the major environmental issues raised when the Lead Agency's position is at variance with recommendations and objections raised in the comments must be addressed in detail, giving the reasons that specific comments and suggestions were not accepted. There must be good faith, reasoned analysis in response. Conclusory statements unsupported by factual information will not suffice. The level of detail contained in the response, however, may correspond to the level of detail provided in the comment (i.e., responses to general comments may be general). A general response may be appropriate when a comment does not contain or specifically refer to readily available information, or does not explain the relevance of evidence submitted with the comment.
- c) The responses to comments may take the form of a revision to the draft EIR or may be a separate section in the Final EIR. Where the responses to comments makes important changes in the information contained in the text of the draft EIR, the Lead Agency should either:
 - 1. Revise the text in the body of the EIR; or
 - 2. Include marginal notes showing that the information is revised in the responses to comments.

Revisions to the Draft EIR have been prepared to make minor revisions to the Draft EIR as a result of comments received during the public review period (refer to Section 3.0, Draft EIR

Clarifications and Revisions, of this document). Therefore, this Response to Comments section, along with the Draft EIR Revisions, are included as part of this Final EIR along with the Draft EIR for consideration by the City of Rancho Cucamonga prior to a vote to certify the Final EIR. The Draft EIR revisions and information presented in the responses to comments do not result in any of the conditions set forth in Section 15088.5 of the State CEQA Guidelines requiring that the EIR be recirculated prior to its certification.

2.1 LIST OF PERSONS, ORGANIZATIONS, AND PUBLIC AGENCIES COMMENTING ON THE DRAFT EIR

In accordance with Section 15132 of the CEQA Guidelines, below is a list of the agency, organization, and person that submitted comments regarding the Draft EIR. During the established public review period, which ended on June 21, 2021, one comment letter was received by the City. Two late comment letters were received after the end of the public review period. Each comment letter received is indexed with a letter below.

- A Adams Broadwell Joseph & Cardozo, Attorneys at Law (on behalf of Californians Allied for a Responsible Economy (CARECA) (June 21, 2021)**
Aidan P. Marshall
- B Mark Rush (June 22, 2021) – Late Comment**
- C California Air Resources Board (CARB) (June 24, 2021) – Late Comment**
Stanley Armstrong, Air Pollution Specialist

2.2 RESPONSES TO COMMENTS

Aside from certain courtesy statements, introductions, closings, and certain attachments, individual comments within the body of each letter have been identified and numbered. A copy of each comment letter and the City's responses to each applicable comment are included in this section. Brackets delineating the individual comments and a numeric identifier have been added to the right margin of the letter. Responses to each comment identified are included on the page(s) following each comment letter. Responses to comments were sent to the agency, organizations and person that provided comments.

COMMENT LETTER A

DANIEL L. CARDOZO
KEVIN T. CARMICHAEL
CHRISTINA M. CARO
JAVIER J. CASTRO
THOMAS A. ENSLOW
KELILAH D. FEDERMAN
ANDREW J. GRAF
TANYA A. GULESSERIAN
KENDRA D. HARTMANN*
KYLE C. JONES
DARIEN K. KEY
RACHAEL E. KOSS
AIDAN P. MARSHALL

MARC D. JOSEPH
Of Counsel

*Not admitted in California.
Licensed in Colorado.

ADAMS BROADWELL JOSEPH & CARDOZO

A PROFESSIONAL CORPORATION

ATTORNEYS AT LAW

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

TEL: (650) 569-1600
FAX: (650) 569-5002

ammarshall@adamsbroadwell.com

SACRAMENTO OFFICE

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

TEL: (916) 444-6201
FAX: (916) 444-0209

June 21, 2021

Via Email and Overnight Mail

Sean McPherson
Senior Planner
City of Rancho Cucamonga
10500 Civic Center Drive
Rancho Cucamonga, CA 91730
Email: sean.mcpherson@cityofrc.us

Re: Comments on the Draft Environmental Impact Report - Bridge Point Rancho Cucamonga Project (DRC 2020-00202, SCH No. 2020100056)

Dear Mr. McPherson:

We are writing on behalf of Californians Allied for a Responsible Economy ("CARECA"), to provide comments on the Draft Environmental Impact Report ("DEIR") prepared by the City of Rancho Cucamonga ("City") for the Bridge Point Rancho Cucamonga Project (DRC 2020-00202, SCH No. 2020100056) ("Project") proposed by Bridge Point Rancho Cucamonga, LLC ("Applicant").

The Project proposes to remove existing structures, landscaping, and associated improvements on the Project site, and redevelop the Project site with two new contemporary industrial warehouse buildings ("Building 1" and "Building 2"). Building 1 and Building 2 would be high-cube warehouses primarily used for the storage and/or consolidation of manufactured goods. The total building area would be approximately 2,175,000 square feet (sf), which includes the 1,422,500 sf Building 1 and 752,500 sf Building 2. The approximately 91.4-gross-acre Project site is located at 12434 4th Street in the City of Rancho Cucamonga, San Bernardino County, California. The Project site comprises tax Assessor Parcel Numbers (APNs) 0229-283-50 and 0229-283-51. The Project also proposes to construct access driveways along 4th Street, 6th Street, and a new public roadway (Street A).

5297-005j

 printed on recycled paper

A-1

COMMENT LETTER A

June 21, 2021
Page 2

Several discretionary approvals are required to implement the Project, including (1) adoption of a General Plan Amendment to change the land use designation for the northern portion of the Project site from Heavy Industrial to General Industrial; (2) adoption of a Zoning Map Amendment to change the zoning designation for the northern portion of the Project site from Heavy Industrial to General Industrial; (3) approval of a Tentative Parcel Map to subdivide the Project site, which is currently a single legal parcel, into two parcels to accommodate the proposed buildings (Buildings 1 and 2); (4) a Tree Removal Permit for the removal of heritage trees on-site; (5) a Development Agreement.¹

We have conducted our review of the DEIR with the assistance of our technical consultants, air quality and hazardous resources expert James J. Clark, Ph.D., traffic and transportation expert Daniel T. Smith, Jr., M.S., and acoustics expert Derek Watry, M.S.² The City must separately respond to these technical comments.

Based upon our review of the DEIR and supporting documentation, we conclude that the DEIR fails to comply with the requirements of CEQA. As explained more fully below, the DEIR fails to provide an accurate Project description and environmental baseline upon which to measure the whole Project's reasonably foreseeable impacts. The consequences of these defects are far-reaching and require the revision of the DEIR. The DEIR does not accurately disclose potentially significant air quality, GHG, soil contamination, noise, transportation, energy, land use and planning, and biological resources impacts. As a result of its shortcomings, the DEIR lacks substantial evidence to support its conclusions and fails to properly mitigate the Project's significant environmental impacts. Further, the City cannot make the requisite findings under the Subdivision Map Act, the General Plan, and the City of Rancho Cucamonga Development Code to approve the Project's Tentative Parcel Map, plan amendment, Zoning Map amendment, development agreement, and Tree Removal Permit. The City cannot approve the Project until the errors and omissions in the DEIR are remedied, and a revised DEIR is recirculated for public review and comment which fully discloses and mitigates the Project's potentially significant environmental and public health impacts.

¹ DEIR, pg. 1-4.

² Dr. Clark's, Mr. Smith's, and Mr. Watry's technical comments and curricula vitae are attached hereto as Exhibits A, B, and C, respectively.
5297-005j

A-1
(cont)

A-2

A-3

COMMENT LETTER A

June 21, 2021
Page 3

I. STATEMENT OF INTEREST

CARECA is an unincorporated association of individuals and labor organizations that may be adversely affected by the potential public and worker health and safety hazards, and the environmental impacts of the Project. The coalition includes the District Council of Ironworkers, Southern California Pipe Trades DC 16, California State Association of Electrical Workers, along with their members, their families, and other individuals who live and work in the City of Rancho Cucamonga, and in San Bernardino County.

CARECA advocates for protecting the environment and the health of their communities' workforces. CARECA seeks to ensure a sustainable construction industry over the long-term by supporting projects that offer genuine economic and employment benefits, and which minimize adverse environmental and other impacts on local communities. CARECA members live, work, recreate, and raise their families in the City of Rancho Cucamonga and surrounding communities. Accordingly, they would be directly affected by the Project's environmental and health and safety impacts. Individual members may also work on the Project itself. They will be first in line to be exposed to any health and safety hazards that exist onsite.

In addition, CARECA has an interest in enforcing environmental laws that encourage sustainable development and ensure a safe working environment for its members. Environmentally detrimental projects can jeopardize future jobs by making it more difficult and more expensive for business and industry to expand in the region, and by making the area less desirable for new businesses and new residents. Indeed, continued environmental degradation can, and has, caused construction moratoriums and other restrictions on growth that, in turn, reduce future employment opportunities.

II. LEGAL BACKGROUND

CEQA has two basic purposes, neither of which the DEIR satisfies. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project.³ CEQA requires that an agency

³ CEQA Guidelines, § 15002, subd. (a)(1).
5297-005j

A-4

A-5

COMMENT LETTER A

June 21, 2021
Page 4

analyze potentially significant environmental impacts in an EIR.⁴ The EIR should not rely on scientifically outdated information to assess the significance of impacts, and should result from “extensive research and information gathering,” including consultation with state and federal agencies, local officials, and the interested public.⁵ To be adequate, the EIR should evidence the lead agency’s good faith effort at full disclosure.⁶ The EIR has been described as “an environmental ‘alarm bell’ whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return.”⁷ “Thus, the EIR protects not only the environment but also informed self-government.”⁸

Second, CEQA directs public agencies to avoid or reduce environmental damage when possible by requiring alternatives or mitigation measures.⁹ The EIR serves to provide public agencies and the public in general with information about the effect that a proposed project is likely to have on the environment and to “identify ways that environmental damage can be avoided or significantly reduced.”¹⁰ If a project has a significant effect on the environment, the agency may approve the project only upon a finding that it has “eliminated or substantially lessened all significant effects on the environment where feasible,” and that any unavoidable significant effects on the environment are “acceptable due to overriding concerns” specified in CEQA section 21081.¹¹

As these comments will demonstrate, the DEIR fails to comply with the requirements of CEQA and may not be used as the basis for approving the Project. It fails in significant aspects to perform its function as an informational document that is meant “to provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment” and “to list ways in which the significant effects of such a project might be minimized.”¹² The DEIR also lacks substantial evidence to support the

A-5
(cont)

⁴ See Pub. Resources Code, § 21000; CEQA Guidelines, § 15002.

⁵ *Berkeley Keep Jets Over the Bay Comm. v. Board of Port Comm.* (“*Berkeley Jets*”) (2001) 91 Cal.App.4th 1344, 1367.; *Schaeffer Land Trust v. San Jose City Council* (1989) 215 Cal.App.3d 612, 620.

⁶ CEQA Guidelines, § 15151; see also *Laurel Heights Improvement Assn. v. Regents of University of California* (“*Laurel Heights I*”) (1988) 47 Cal.3d 376, 406.

⁷ *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.

⁸ *Citizens of Goleta Valley v. Bd. of Supervisors* (1990) 52 Cal.3d 553, 564 (citations omitted).

⁹ CEQA Guidelines, § 15002, subd. (a)(2)-(3); *Berkeley Jets*, *supra*, 91 Cal.App.4th at 1354.

¹⁰ CEQA Guidelines, § 15002, subd. (a)(2).

¹¹ *Id.*, subd. (b)(2)(A)-(B).

¹² *Laurel Heights I*, *supra*, 47 Cal.3d at p. 391.
5297-005j

COMMENT LETTER A

June 21, 2021
Page 5

City's proposed findings that the Project will not result in any significant, unmitigated impacts.

III. THE PROJECT DESCRIPTION IS INADEQUATE

The DEIR does not meet CEQA's requirements because it fails to include an accurate and complete Project description, rendering the entire analysis inadequate. California courts have repeatedly held that "an accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient EIR."¹³ CEQA requires that a project be described with enough particularity that its impacts can be assessed.¹⁴ Without a complete project description, the environmental analysis under CEQA is impermissibly limited, thus minimizing the project's impacts and undermining meaningful public review.¹⁵ Accordingly, a lead agency may not hide behind its failure to obtain a complete and accurate project description.¹⁶

CEQA Guidelines section 15378 defines "project" to mean "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."¹⁷ "The term 'project' refers to the activity which is being approved and which may be subject to several discretionary approvals by governmental agencies. The term project does not mean each separate governmental approval."¹⁸ Courts have explained that a complete description of a project must "address not only the immediate environmental consequences of going forward with the project, but also all 'reasonably foreseeable consequence[s] of the initial project.'"¹⁹ "If a[n]...EIR...does not adequately apprise all interested parties of the true scope of the project for intelligent weighing of the environmental consequences of the project, informed decisionmaking cannot occur under CEQA and the final EIR is inadequate as a matter of law."²⁰

¹³ *Stopthemillenniumhollywood.com v. City of Los Angeles* (2019) 39 Cal.App.5th 1, 17; *Communities for a Better Environment v. City of Richmond* ("CBE v. Richmond") (2010) 184 Cal.App.4th 70, 85–89; *County of Inyo v. City of Los Angeles* (3d Dist. 1977) 71 Cal.App.3d 185, 193.

¹⁴ 14 CCR § 15124; see, *Laurel Heights I, supra*, 47 Cal.3d 376, 192-193.

¹⁵ *Id.*

¹⁶ *Sundstrom v. County of Mendocino* ("Sundstrom") (1988) 202 Cal.App.3d 296, 311.

¹⁷ CEQA Guidelines § 15378.

¹⁸ *Id.*, § 15378(c).

¹⁹ *Laurel Heights I*, 47 Cal. 3d 376, 398 (emphasis added); see also *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal. 4th 412, 449-50.

²⁰ *Riverwatch v. Olivenhain Municipal Water Dist.* (2009) 170 Cal. App. 4th 1186, 1201. 5297-005j

A-5
(cont)

A-6

COMMENT LETTER A

June 21, 2021
Page 6

A. The DEIR Fails to Substantiate Its Estimate that 10% Percent of the Project Will be Used for Cold Storage

The DEIR provides that “for purposes of analysis in this Draft EIR [...] based on the proposed building design/site plan and associated parking layout, it is assumed that 90% of the building square footage would be operated as a high-cube non-sort fulfillment center warehouse and the remaining 10% would be operated as a high-cube cold storage warehouse.”²¹ Although the DEIR states that the estimate that only 10% of the Project will be operated as cold storage was based on the proposed building design/site plan and associated parking layout, the DEIR fails to disclose the facts and reasoning comprising this analysis. In order for the public to evaluate the accuracy of this estimate, the DEIR must explain how it is justified by specific attributes of Building 1 and 2, or provide binding Project conditions which limit warehouse use to no more than 10% cold storage.

The DEIR acknowledges that “a cold storage warehouse generates greater environmental impacts than a high cube warehouse, since cold storage generates more trips per square foot and has higher energy impacts due to the low temperatures required by the facility’s refrigerated trucks and on-site storage.”²² It is therefore critical for the City to disclose the facts surrounding the DEIR’s assumption that cold storage would occupy just 10% of Project facilities in order for the public to be able to evaluate the accuracy of the DEIR’s assumption. The DEIR lacks this discussion, and thus fails as an informational document.²³ Further, any analysis in the DEIR that relies on the assumption that 10% of the Project would be operated as a high-cube cold storage warehouse is not supported by substantial evidence, and must be revised.

B. The DEIR Fails to Substantiate its Claim that the Project Does Not Support Use as a Sort Fulfillment Center Warehouse

The DEIR analyzed the Project assuming it would be used as a high-cube *non-sort* fulfillment center warehouse, and contains a supplemental analysis of the Project that assumes it would be used as high-cube *sort* fulfillment center warehouse. However, the DEIR states that “[a] high-cube *sort* fulfillment center

²¹ DEIR, pg. 1-3.

²² *Id.* at pg. 3-39.

²³ *Comtys. for a Better Env’t v. City of Richmond* (“*CBE v. Richmond*”) (2010) 184 Cal.App.4th 70, 85; *Topanga*, 11 Cal.3d at 515 (EIR must provide reader with analytic bridge between ultimate findings and the facts in the record).
5297-005j

A-7

A-8

COMMENT LETTER A

June 21, 2021
Page 7

warehouse is not proposed as part of the Project, and the site plan as proposed does not support this on-site use” [emphasis added].²⁴ This statement is misleading, because there is substantial evidence in the record demonstrating that a sorting facility would be an authorized use under the proposed Project entitlements, making it a reasonably foreseeable use. Moreover, the DEIR states that “[t]he future tenants of the buildings are not known at the time of writing this Draft EIR.”²⁵ While the DEIR does not explain why the site plan does not support sort fulfillment, there is no indication in the site plan showing that sort fulfillment is *not* a supported use.²⁶ Further, sort fulfillment is compatible with the City of Rancho Cucamonga General Plan’s General Industrial designation, which permits a wide range of industrial activities that include manufacturing, assembling, and fabrication.²⁷

The City therefore lacks substantial evidence to conclude that sorting would not occur at the Project site following construction. Conversion of the Project site to a sorting warehouse use would result in more significant air quality, GHG, and transportation impacts than those analyzed in the main impacts analysis of the DEIR. The DEIR should be revised to include sort fulfillment as a potential use at the project site. The DEIR’s failure to put forth a clear project description that is reflective of the Project’s potential uses violates CEQA.²⁸

C. The DEIR Fails to Identify End Users for the Project

The Project description typically need not identify the end user for a project because CEQA is concerned with the project’s environmental impacts, not who uses it.²⁹ However, courts have held that where the tenant, or type of business, is known and there is evidence that an impact unique to that tenant or type of business will result, an EIR must disclose that information.³⁰ Here, the type of users of the Project has significant environmental impacts depending on whether they require

²⁴ DEIR, pg. 3-39.

²⁵ DEIR, pg. 3-9.

²⁶ DEIR, pg. 3-8.

²⁷ City of Rancho Cucamonga General Plan, pg. LU-17.

²⁸ *Stopthemillenniumhollywood.com v. City of Los Angeles* (2019) 39 Cal.App.5th 1, 17; *Communities for a Better Environment v. City of Richmond* (“*CBE v. Richmond*”) (2010) 184 Cal.App.4th 70, 85–89; *County of Inyo v. City of Los Angeles* (3d Dist. 1977) 71 Cal.App.3d 185, 193 (providing that an accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient EIR).

²⁹ *Maintain Our Desert Env’t v. Town of Apple Valley* (2004) 124 CA4th 430.

³⁰ *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 CA4th 1184, 1213. 5297-005j

A-8
(cont)

A-9

COMMENT LETTER A

June 21, 2021
Page 8

cold storage. “[A] cold storage warehouse generates greater environmental impacts than a high cube warehouse, since cold storage generates more trips per square foot and has higher energy impacts due to the low temperatures required by the facility’s refrigerated trucks and on-site storage.”³¹ Therefore, if the City or Applicant has any knowledge as to the types of end users to whom the Project will cater, the DEIR must include that information.

D. The DEIR Fails to Disclose Whether the Project Will Require Use of Backup Generators

An EIR must include an analysis of the environmental effects of a proposed future expansion or other future action at a project site if: (1) it is a reasonably foreseeable consequence of the initial project; and (2) the future expansion or action will be significant in that it will likely change the scope or nature of the initial project or its environmental effects.³² The DEIR provides that 10% of the Project’s building would be occupied by high-cube cold storage warehouse uses (217,500 sf).³³ A cold storage warehouse has the ability to keep temperature sensitive items in a temperature-controlled environment, which requires a constant energy supply to power refrigeration.³⁴ Cold storage warehouses commonly utilize backup generators.³⁵ Backup generators commonly rely on fuels such as natural gas or diesel,³⁶ and thus can significantly impact air quality, GHG emissions, and public

A-9
(cont)

A-10

³¹ DEIR, pg. 3-39.

³² *Id.*

³³ *Id.* at pg. 4.5-21.

³⁴ *Id.* at pg. 3-9.

³⁵ California Air Resources Board, Comments re: Notice of Preparation (NOP) for the United States Cold Storage Hesperia Project (Project) Draft Environmental Impact Report (DEIR), State Clearinghouse No. 2020069036 (July 24, 2020), available at <https://ww2.arb.ca.gov/sites/default/files/classic/toxics/ttdceqalist/uscoldstorage.pdf> (stating that the HRA prepared for the Project should account for all potential health risks from Project-related diesel PM emission sources such as backup generators, TRUs, and heavy-duty truck traffic); Kusing Power Generator, <http://ksdieselgenerator.com/2019/backup-generator-for-cold-storage-room.html>, last visited 6/21/2021 (“Backup power supply is necessary for cold storage room to remain functional to avoid deterioration of high value-added goods such as vegetables and food stored in the room after long period of power failure”); East Coast Power Systems, Electrical Power Systems for Warehouses, <https://www.ecpowersystems.com/resources/electrical-power-systems/electrical-power-systems-for-warehouses/> (explaining that some warehouses that deal with refrigeration have to have multiple power backup generators by law).

³⁶ SCAQMD, Fact Sheet on Emergency Backup Generators, <http://www.aqmd.gov/home/permits/emergency-generators> (“Most of the existing emergency backup generators use diesel as fuel”).
5297-005j

COMMENT LETTER A

June 21, 2021
Page 9

health through toxic diesel particulate (“DPM”) emissions.³⁷ Since the Project will include cold storage, it is reasonably foreseeable that the Project would require on-site backup generators. Therefore, the DEIR must disclose whether the Project will use generators, and, if so, analyze the effects of the Project’s use of generators. The DEIR’s failure to provide any information about the use of generators causes the DEIR to fail as an informational document.

E. The DEIR Erroneously Limits the Scope of the Project to Omit Natural Gas Use by Future Tenants

The DEIR states that “natural gas service to the Project is not required and the Project does not include the installation of natural gas lines. Connections to existing gas lines in 4th Street and 6th Street could be made in the future if a tenant requires natural gas for operations.” The DEIR’s determination that natural gas service is not part of the Project is incorrectly reasoned. Courts have explained that a complete description of a project must “address not only the immediate environmental consequences of going forward with the project, but also all “reasonably foreseeable consequence[s] of the initial project.”³⁸ By failing to consider the likelihood of natural gas use by tenants, the DEIR fails to provide the necessary information to meet this legal standard.

This unsupported Project description is consequential because when considering whether the Project would result in a potentially significant

³⁷ California Air Resources Board, Emission Impact: Additional Generator Usage Associated with Power Outage (January 30, 2020), available at <https://ww2.arb.ca.gov/resources/documents/emissions-impact-generator-usage-during-psps> (showing that generators commonly rely on gasoline or diesel, and that use of generators during power outages results in excess emissions); California Air Resources Board, Use of Back-up Engines for Electricity Generation During Public Safety Power Shutoff Events (October 25, 2019), available at <https://ww2.arb.ca.gov/resources/documents/use-back-engines-electricity-generation-during-public-safety-power-shutoff> (“When electric utilities de-energize their electric lines, the demand for back-up power increases. This demand for reliable back-up power has health impacts of its own. Of particular concern are health effects related to emissions from diesel back-up engines. Diesel particulate matter (DPM) has been identified as a toxic air contaminant, composed of carbon particles and numerous organic compounds, including over forty known cancer-causing organic substances. The majority of DPM is small enough to be inhaled deep into the lungs and make them more susceptible to injury. Much of the back-up power produced during PSPS events is expected to come from engines regulated by CARB and California’s 35 air pollution control and air quality management districts (air districts)”).

³⁸ *Laurel Heights I, supra*, 47 Cal. 3d 376, 398 (emphasis added); *see also Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal. 4th 412, 449-50.
5297-005j

A-10
(cont)

A-11

COMMENT LETTER A

June 21, 2021
Page 10

environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, the DEIR assumes that the Project would not use natural gas. If the anticipated natural gas consumption by future tenants is above zero, then the DEIR underestimates the Project's energy impacts. These undisclosed impacts are potentially significant. The DEIR must be revised to include an estimate of the anticipated natural gas use by future tenants of the Project, and reconduct the energy impact analysis with that estimate included.

A-11
(cont)

E. The DEIR Fails to Describe the Project's Lifespan

The DEIR does not disclose the expected lifespan of the Project. Such information is necessary to evaluate the impacts of the Project's operations on the environment. Per South Coast Air Quality Management District ("SCAQMD") recommendations, the DEIR assumes a 30-year Project life when conducting the GHG emissions analysis, but fails to provide elsewhere a Project-specific lifespan.³⁹ The courts have held that an EIR fails as an informational document when the project description is obscure as to the true scope of the project.⁴⁰

A-12

IV. THE DEIR FAILS TO ADEQUATELY ESTABLISH THE EXISTING BASELINE

CEQA requires that a lead agency include a description of the physical environmental conditions in the vicinity of the Project as they exist at the time environmental review commences.⁴¹ As numerous courts have held, the impacts of a project must be measured against the "real conditions on the ground."⁴² The description of the environmental setting constitutes the baseline physical conditions by which a lead agency may assess the significance of a project's impacts.⁴³ Use of the proper baseline is critical to a meaningful assessment of a project's environmental impacts.⁴⁴ An agency's failure to adequately describe the existing setting contravenes the fundamental purpose of the environmental review process, which is to determine whether there is a potentially substantial, adverse change

A-13

³⁹ DEIR, pg. 4.7-13.

⁴⁰ *CBE v. Richmond*, 184 Cal.App.4th at 85-89.

⁴¹ CEQA Guidelines, § 15125, subd. (a).

⁴² *Save Our Peninsula Com. v. Monterey Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 121-22; *City of Carmel-by-the Sea v. Bd. of Supervisors* (1986) 183 Cal.App.3d 229, 246.

⁴³ CEQA Guidelines, § 15125, subd. (a).

⁴⁴ *Communities for a Better Environment v. South Coast Air Quality Management District* (2010) 48 Ca.4th 310, 320.
5297-005j

COMMENT LETTER A

June 21, 2021
Page 11

compared to the existing setting.

Baseline information on which a lead agency relies must be supported by substantial evidence.⁴⁵ The CEQA Guidelines define “substantial evidence” as “enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion.”⁴⁶ “Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts ... [U]nsupported opinion or narrative [and] evidence which is clearly inaccurate or erroneous ... is not substantial evidence.”⁴⁷

A. The DEIR Incorrectly Establishes its Baselines on Conditions that Did Not Exist on the Date the Notice of Preparation was Released.

The California Supreme Court, in *Communities for a Better Environment v. South Coast Air Quality Management District* (“*CBE v. SCAQMD*”),⁴⁸ recognized that “the baseline ‘normally’ consists of ‘the physical environmental conditions in the vicinity of the project, as they exist at the time ... environmental analysis is commenced....’”⁴⁹ This decision considered a long line of Court of Appeal decisions that hold, in similar terms, that the impacts of a proposed project are ordinarily to be compared to the actual environmental conditions existing at the time of CEQA analysis.⁵⁰ This line of authority includes cases where a plan or regulation allowed

A-13
(cont)

A-14

⁴⁵ *CBE v. SCAQMD*, *supra*, 48 Cal.4th at 321 (stating “an agency enjoys the discretion to decide [...] exactly how the existing physical conditions without the project can most realistically be measured, subject to review, as with all CEQA factual determinations, for support by substantial evidence”); see *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 435.

⁴⁶ CEQA Guidelines §15384.

⁴⁷ Pub. Resources Code § 21082.2(c).

⁴⁸ (2010) 48 Cal. 4th 310, 321 (agency erred in using boilers’ maximum permitted operational levels as a baseline when operation of the boilers at maximum levels was not the norm).

⁴⁹ *CBE v. SCAQMD*, *supra*, 48 Cal.4th 310, 327–328, citing Guidelines, § 15125, subd. (a)

⁵⁰ *Environmental Planning Information Council v. County of El Dorado* (1982) 131 Cal.App.3d 350, 354, 357-358 (effects of a proposed area plan for land development must be compared to the existing physical conditions in the area, rather than to development permitted under the county’s general plan); *City of Carmel-by-the-Sea v. Board of Supervisors* (1986) 183 Cal.App.3d 229, 246-247 (effects of rezoning must be compared to the existing physical environment, rather than to development allowed under a prior land use plan); *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 955 (baseline for water diversion project was actually existing stream flows, not minimum stream flows set by federal license); *Save Our Peninsula Committee v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 121 (water use baseline for analysis of proposed land development was actual use without the project, not what the applicant was entitled to use for 5297-005)

COMMENT LETTER A

June 21, 2021
Page 12

for greater development or more intense activity than had so far actually occurred, as well as cases where actual development or activity had, by the time CEQA analysis was begun, already exceeded that allowed under the existing regulations.⁵¹

In *CBE v. SCAQMD*, the Supreme Court identified circumstances under which a lead agency could deviate from the “normal” baseline of conditions existing at the date the Notice of Preparation is released. ConocoPhillips had applied to modify an operating petroleum refinery in a way that would increase operation of four boilers that produced steam for refinery operations.⁵² The lead agency selected as the project’s baseline for nitrogen oxide emissions the amount the boilers would emit if they operated at the maximum level allowed under ConocoPhillips’s existing permits, even though ConocoPhillips had never operated them at that level.⁵³ Citing that refinery operations “vary greatly with the season, crude oil supplies, market conditions, and other factors,”⁵⁴ the court explained that agencies may exercise discretion to accommodate a “temporary lull or spike in operations that happens to occur at the time of environmental review.”⁵⁵ The Court held that a lead agency enjoys the discretion to decide how the existing physical conditions can most realistically be measured, supported by substantial evidence.⁵⁶ The Court rejected the “maximum level permitted” baseline because it did not aim to reflect existing conditions.

A-14
(cont)

irrigation); *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 658 (baseline for proposed expansion of a mining operation must be the “realized physical conditions on the ground, as opposed to merely hypothetical conditions allowable under existing plans”); *Woodward Park Homeowners Assn., Inc. v. City of Fresno* (2007) 150 Cal.App.4th 683, 693, 706-710 (effects of a large office and shopping center development must be compared to the current undeveloped condition of the property, rather than to an office park that could be developed under existing zoning).

⁵¹ *CBE v. SCAQMD*, *supra*, 48 Ca.4th 310, 321.

⁵² *Id.* at 318.

⁵³ *Id.* at 316.

⁵⁴ *Id.* at 327.

⁵⁵ *Id.* at 328.

⁵⁶ *Id.*

5297-005j

COMMENT LETTER A

June 21, 2021
Page 13

Some subsequent cases,⁵⁷ as well as the CEQA Guidelines,⁵⁸ have allowed lead agencies to deviate from using the NOP date as the baseline when assessing existing facilities/operations in limited situations “where conditions change or fluctuate over time.” However, in most cases, the facility/operation was still operating to some extent at the time of the NOP.⁵⁹

For example, in *Association of Irrigated Residents v. Kern County Board of Supervisors*,⁶⁰ the court reviewed the baseline set for an oil refinery that temporarily suspended refining operations at the time of the NOP. The baseline was set at operating levels of the facility in 2007, when the refinery was operating at full capacity, whereas in 2013, the date of the NOP, no refining operations were occurring. The court articulated the baseline analysis as such:⁶¹

Our analysis of County’s treatment of the baseline question breaks the County’s approach into two factual components. The first inquiry considers the basic question of whether County has a sufficient evidentiary basis for finding existing conditions included an *operating* refinery. If that finding is upheld, the second inquiry addresses whether substantial evidence supports

A-14
(cont)

⁵⁷ See *North County Advocates v. County of Carlsbad* (2015) 241 Cal.App.4th 94, 105 (upholding use of recent historical traffic levels as a baseline for currently operating shopping mall with greater-than-usual vacancies, noting that “the nature of a shopping center is that tenants change and the amount of occupied space constantly fluctuates”); *San Francisco Baykeeper, Inc. v. State Lands Commission* (2015) 242 CA4th 202, 218 (upholding a baseline for a continuously operating sand mine that was derived from 5 years of historical mining operations, noting that the amount of sand mined fluctuates substantially from year to year due to a variety of factors); *Association of Irrigated Residents v. Kern County Board of Supervisors* (2017) 17 CA5th 708, 709 (upholding baseline based on oil refinery’s last year of full operations, noting that the facility was currently in operation at the time of the NOP and its permits remained in place); *Cherry Valley Pass Acres & Neighbors v. City of Beaumont* (2010) 190 CA4th 316 (upholding baseline closely approximating historic water use of egg farm in 2004, noting that egg farm only ceased operations after NOP date in 2005).

⁵⁸ CEQA Guidelines, Section 15125(a)(1) (providing, “[w]here existing conditions change or fluctuate over time, and where necessary to provide the most accurate picture practically possible of the project’s impacts, a lead agency may define existing conditions by referencing historic conditions, or conditions expected when the project becomes operational, or both, that are supported with substantial evidence. In addition, a lead agency may also use baselines consisting of both existing conditions and projected future conditions that are supported by reliable projections based on substantial evidence in the record”).

⁵⁹ See note 57.

⁶⁰ (2017) 17 CA5th 708.

⁶¹ *Id.* at 728.

5297-005j

COMMENT LETTER A

June 21, 2021
Page 14

County's choice of 2007 as a *realistic measure* of the baseline physical conditions created by the refinery's operations. [emphasis in original text]

To the first inquiry, the court "conclude[d] the EIR's choice of 2007 as the measure of an existing conditions baseline for an operating refinery (1) was supported by substantial evidence."⁶² The court noted that suspension of operations was intended as temporary, and that the refinery had a "history of fluctuating operations"⁶³ – the refinery frequently started and stopped refining operations. The court noted as relevant that when the refinery suspended operations at the time of the NOP, the refinery "continued other operations and activities. Those continuing activities included managing inventory, blending and marketing fuels, and functioning as a terminal for crude oil and finished petroleum products."⁶⁴ To the second inquiry, substantial evidence supported that the 2007 figure was a reasonable representation of the operations actually performed at the refinery.⁶⁵

In *North County Advocates v. County of Carlsbad*,⁶⁶ the court upheld the use of recent historical traffic levels as a baseline for an operating shopping mall with that had greater-than-usual vacancies. Specifically, a large department store retail space in the mall was vacant at the time of the NOP. In determining the scope of baseline operations, the court analyzed the historical occupancy of the mall. The court noted that, although the retail space in question was vacant at the time CEQA review commenced, the mall remained operational. The court observed that the department store retail space within the mall frequently fluctuated in occupancy – for instance, "the Robinsons-May space was less occupied from 2007 through 2009 (two retail users occupied part of it from August 2006 through December 2007, and two others occupied part of it from August through November in 2008 and in 2009)."⁶⁷ The court concluded, "[w]e view this fluctuating occupancy—which is 'the nature of a shopping center'—as akin to the varying oil refinery operations in *Communities for a Better Environment*."⁶⁸ Therefore, the court permitted the shopping center to use a baseline that assumed the department store retail space was occupied.

A-14
(cont)

⁶² *Id.* at 718.

⁶³ *Id.*

⁶⁴ *Id.* at 720.

⁶⁵ *Id.* at 729.

⁶⁶ (2015) 241 Cal.App.4th 94.

⁶⁷ DEIR, pg. 15.

⁶⁸ *Id.*

5297-005j

COMMENT LETTER A

June 21, 2021
Page 15

Here, the Project site includes a retail building and warehouse building which were occupied by Big Lots until February 2020.⁶⁹ The buildings have remained vacant since.⁷⁰ Unlike the shopping mall in *North County Advocates*, which sought to fill a vacant space in an existing mall, or the refinery in *AIR v. Kern*, which had ongoing refining operations at the time of the NOP, the Project has no relationship to the former Big Lots store, is not filling an existing vacancy in an otherwise operating facility, and is not an expansion or replacement of components of an existing facility. Rather, the Project proposes to demolish the site's currently vacant buildings to construct and operate a brand new use at the Project site. The facts of the Project do not allow the City to take any credit for baseline operations based on the shuttered Big Lots facility that occupied the site before February 2020.

The Notice of Preparation for this DEIR was released on October 2, 2020.⁷¹ Therefore, the Project site was vacant at the date of the NOP. Therefore, the "normal" baseline described in *CBE v. SCAQMD*, which should reflect the physical environmental conditions in the vicinity of the project, as they exist at the time environmental analysis is commenced, is of a vacant warehouse and retail building.⁷² However, as will be discussed in the following section in more detail, when assessing environmental impacts, the DEIR erroneously sets its baseline assuming the Project site's existing warehouse and retail buildings are still operating.

The DEIR fails to provide substantial evidence to justify deviation from the "normal" baseline. The DEIR cannot provide this evidence because operations on the Project site had completely ceased, which makes this case plainly distinguishable from *Association of Irrigated Residents v. Kern County Board of Supervisors*,⁷³ *CBE v. SCAQMD*,⁷⁴ *North County Advocates v. County of Carlsbad*,⁷⁵ and other leading cases⁷⁶ allowing use of recent historical conditions as a baseline. Those cases all involved operations active at the time of the NOP experiencing a

A-14
(cont)

⁶⁹ *Id.* 1-2.

⁷⁰ *Id.*, pg. 1-5.

⁷¹ City of Rancho Cucamonga Planning Department, Notice of Preparation of a Draft Environmental Impact Report (EIR) and Public Scoping Meeting for the Bridge Point Rancho Cucamonga Project (DRC2020-00202) (October 2, 2020).

⁷² *CBE v. SCAQMD*, *supra*, 48 Ca.4th 310, 327-328, citing Guidelines, § 15125, subd. (a).

⁷³ (2017) 17 CA5th 708.

⁷⁴ (2010) 48 Ca.4th 310, 320.

⁷⁵ (2015) 241 Cal.App.4th 94.

⁷⁶ *See* note 57.

5297-005j

COMMENT LETTER A

June 21, 2021
Page 16

temporary “lull” due to their “history of fluctuating conditions.”⁷⁷ Here, the Project involves a completely vacated facility at the date of the NOP; Big Lots did not merely halt operations for a period – it completely vacated the premises. There is no evidence that Big Lots expects to reoccupy the Project site, or that warehousing and retail are businesses where operations are expected to vacate and reoccupy facilities due to regularly fluctuating conditions. Therefore, the DEIR lacks evidence for finding existing conditions included an *operating* warehouse and retail building.

The City therefore lacks substantial evidence to support its reliance on fully operational retail center baselines to inform its analysis of the Project’s impacts. The DEIR must be revised and recirculated to include baseline analyses which reflect the conditions existing at the Project site at the time of the Notice of Preparation, and to revise any impact analyses that utilized these erroneous baselines.

B. Since Baseline Conditions for the Project are Those Existing at the Time of the NOP, All of the DEIR’s Baseline Analyses Are Inaccurate and Must be Revised

The DEIR bases its analyses and significant impact findings on the following baselines. These, and any others that fail to reflect conditions existing at the time of the Notice of Preparation, must be revised to reflect the “near-zero baseline” conditions existing at the time the Notice of Preparation was released:

- (1) The trip generation baseline represents the amount of traffic that is attracted and produced by the existing development.⁷⁸ Existing use trip generation was “based on the Institute of Transportation Engineers (“ITE”) trip generation information [...] for operation of the warehouse building as a high-cube transload short-term storage warehouse use (without cold storage) and operation of the retail building as a free-standing discount store use.”⁷⁹ This baseline does not reflect conditions existing at the NOP date because the vacant Project site generated a near-zero number of trips.

⁷⁷ *Id.*

⁷⁸ DEIR, Appendix L2, pg. 1.

⁷⁹ *Id.*, DEIR, pg. 4.2-23.

5297-005j

A-14
(cont)

A-15

COMMENT LETTER A

June 21, 2021
Page 17

- (2) The mobile source air pollution emissions baseline,⁸⁰ mobile source GHG emissions baseline,⁸¹ transportation energy demands baseline,⁸² traffic fuel consumption baseline,⁸³ VMT baseline,⁸⁴ and transportation hazards baseline,⁸⁵ etc., are based on the ITE trip generation estimates for operation of the warehouse building as a high-cube transload short-term storage warehouse use (without cold storage) and operation of the retail building as a free-standing discount store use. Because the trip generation baseline does not reflect existing conditions, these baselines are similarly erroneous.
- (3) Baseline emissions associated with architectural coatings, consumer products, and landscape maintenance equipment are calculated based on assumptions that the currently vacant Project site is operating.⁸⁶ These baselines must be revised to reflect the vacant state of the Project site. A more accurate baseline for emissions from consumer products would be near zero. Landscape maintenance is likely less frequent and intensive for a vacant site than one occupied with an operating business; the baseline for landscape maintenance emissions must be reduced. Architectural coatings might be applied less frequently for a shuttered facility, so this baseline must likely be reduced.
- (4) The baseline natural gas, electricity, and water consumption by the existing facility is based on historic conditions when the existing facilities were occupied by Big Lots.⁸⁷ Utility usage for a vacant facility is likely near zero, so this baseline does not reflect conditions existing at the time of the NOP.
- (5) The energy-related emissions baseline reflects historic utility usage, derived from utility bills from previous tenants.⁸⁸ Utility usage for a vacant facility is near zero, so this baseline must be revised.

A-15
(cont)

⁸⁰ *Id.*, pg. 4.2-23.

⁸¹ *Id.*, pg. 4.7-10

⁸² *Id.*, pg. 4.5-10.

⁸³ DEIR, pg. 4.5-23.

⁸⁴ *Id.*, pg. 4.13-11.

⁸⁵ *Id.*, pg. 4.13-38.

⁸⁶ *Id.*, pg. 4.2-23.

⁸⁷ *Id.*, pg. 4.15-13.

⁸⁸ *Id.*, Appendix E, pg. 42.

5297-005j

COMMENT LETTER A

June 21, 2021
Page 18

- (6) The wastewater generated by the existing uses at the Project site assumes the site is occupied.⁸⁹ The vacant Project site likely does not produce wastewater, so this baseline does not reflect the conditions at the time of the NOP.
- (7) The baseline potable water demand assumes the existing structures on the Project site consume water.⁹⁰ The correct potable water demand is zero.
- (8) The existing site GHG emissions baseline is derived from the site's energy source, mobile, source, waste, water usage GHG emissions, and assumes an operating Project site.⁹¹ As discussed above, these types of consumption are drastically reduced when considering a vacant facility, such as that which existed at the time of the NOP.
- (9) The baseline employment opportunities at the Project site assume the Project site is occupied by operating businesses. The facilities on the Project site at the date of the NOP do not have employees.⁹²

C. Even if the DEIR Could Rely on a Baseline that Assumes a Fully Operating Project Site, the DEIR's Baselines Fail to Accurately Represent Historically Existing Operations

In addition to failing to accurately reflect the vacant site conditions existing at the time of the NOP, the DEIR fails to accurately reflect conditions when the warehouse and retail building on the Project site were in use.

i. The Trip Generation Baseline and Baselines Derived from It are Hypothetical

The trip generation baseline⁹³ for the existing facility improperly reflects hypothetical conditions, without providing substantial evidence to support the

A-15
(cont)

A-16

A-17

⁸⁹ *Id.*, , pg. 4.15-16.

⁹⁰ *Id.*, pg. 4.15-19.

⁹¹ *Id.*, pg. 4.7-10.

⁹² *Id.*, pg. 4.12-4.

⁹³ *Id.*, Appendix L2, pg. 1.
5297-005j

COMMENT LETTER A

June 21, 2021
Page 19

assumed baseline conditions.⁹⁴ The mobile source emissions baseline,⁹⁵ operational transportation hazards baseline,⁹⁶ VMT impacts,⁹⁷ and traffic annual fuel consumption baseline⁹⁸ are based on the trip generation baseline, and thus are also hypothetical.

The DEIR explains that trips generated by the existing facility were based on Institute of Transportation Engineers (“ITE”) trip generation information for operation of the warehouse building as a high-cube transload short-term storage warehouse use (without cold storage) and operation of the retail building as a free-standing discount store use.⁹⁹ However, the DEIR states that “[s]ince construction, the site buildings have been occupied by Pic-N-Save and Big Lots for warehouse, distribution, and retail purposes.”¹⁰⁰ While Pic-N-Save and Big Lots purportedly used the warehouse for warehousing and distribution, the City fails to provide any evidence to suggest that these tenants engaged in transload short-term storage warehouse activity, as proposed for the Project. Transloading is a shipping term that refers to the transfer of goods from one mode of transportation to another en route to their ultimate destination.¹⁰¹ As Pic-N-Save and Big Lots are retail businesses, it is unclear whether they engaged in as much transloading as a dedicated short-term transload warehouse. In any case, the DEIR’s environmental setting fails to establish the historic level of utilization of the warehouse.

Additionally, the DEIR does not present substantial evidence that the existing warehouse would be considered a “high-cube” warehouse. Although the DEIR states in several discussions that “the Project site is currently developed with a 1,431,000 sf of High-Cube Transload Short-Term Storage Warehouse (Without

A-17
(cont)

A-18

⁹⁴ CEQA Guidelines, Section 15125(a)(3) (providing that “[a]n existing conditions baseline shall not include hypothetical conditions, such as those that might be allowed, but have never actually occurred, under existing permits or plans, as the baseline”).

⁹⁵ DEIR, pg. 4.2-23 (setting baseline air pollutant emissions from the existing facility), pg. 4.7-10 (setting baseline GHG emissions from existing facility).

⁹⁶ *Id.*, pg. 13-38 (the DEIR subtracts the trips generated from the “existing” facility from the proposed Project when assessing hazards).

⁹⁷ *Id.*, Appendix L1, Attachment C (“The proposed Project is anticipated to generate a total of 976 net new vehicle trip-ends per day as compared to the existing land uses”).

⁹⁸ *Id.*, pg. 4.5-23.

⁹⁹ *Id.*, pg. 4.2-23 (setting baseline emissions from the existing facility); pg. 4.5-10 (setting baseline for assessing existing transportation energy demands).

¹⁰⁰ *Id.*, pg. 4.8-13.

¹⁰¹ Ken Wilton, Investopedia, “Transloading” (updated February 1, 2021), <https://www.investopedia.com/terms/t/transloading.asp> (last accessed June 18, 2021). 5297-005j

COMMENT LETTER A

June 21, 2021
Page 20

Cold Storage) use,”¹⁰² the DEIR seems to be referring to its ITE-derived baseline, rather than the actual warehouse on the Project site.

This approach to setting the trip generation baseline is firmly proscribed under CEQA. Section 15125(a)(3) of the CEQA Guidelines provides that “[a]n existing conditions baseline shall not include hypothetical conditions, such as those that might be allowed, but have never actually occurred, under existing permits or plans, as the baseline.” Here, there is insufficient evidence that the Project site was ever used as a high-cube transload short-term storage warehouse. There is no evidence that the historic volume of shipping/warehousing at the Project site was ever as high as the ITE trip generation assumptions. Rather, the City’s baseline is based on activity that the existing warehouse *could* support, rather than historically supported. Therefore, this baseline improperly reflects hypothetical conditions instead of existing conditions. Any analysis in the DEIR that relies on this baseline is not based on substantial evidence.

If the City has a sufficient evidentiary basis for finding existing conditions included an *operating* warehouse and retail building, it must revise the DEIR’s trip numbers and mobile source emissions for the existing facility to reflect operations that actually existed. The DEIR must be revised and recirculated to include the correct information.

ii. The Employment Opportunity Baseline of the Project Site is Hypothetical

The City improperly uses a hypothetical baseline for the Project site’s existing employment opportunities, which it uses when assessing the Project’s impact on housing and population growth. Noting that the Project site has been vacant since February 2020, the DEIR states:¹⁰³

“[b]ased on the employment generation rate for retail uses presented in Table LU-18, Build Out Summary by Land Use, of the Rancho Cucamonga General Plan (1 employee per 655 sf), and an employment generation rate of 1 employee per 1,226 sf for the existing warehouse use, which is the average employment generation rate for General Industrial uses (1 employee per 1,471 sf) and Heavy Industrial uses (1 employee per 981 sf) (Rancho

¹⁰² DEIR, Appendix B1, pg. 6, 36; Appendix I2, pg. 1.
¹⁰³ DEIR, pg. 4.12-4.
5297-005j

A-18
(cont)

A-19

A-20

COMMENT LETTER A

June 21, 2021
Page 21

Cucamonga, 2010a), the existing land use designations for the Project site, it is estimated the current buildings could accommodate 1,202 employees.

Since the DEIR sets the baseline for the number of jobs by analyzing how many jobs a business the size of the Project site *could* support, it fails to attempt to reflect existing conditions. The DEIR fails to provide evidence justifying this typically-disapproved baseline.

The DEIR uses this baseline to estimate that the Project would result in a net increase of approximately 277 employment opportunities compared to the number of employment opportunities estimated for the existing buildings.¹⁰⁴ The DEIR concludes that, as a result, “[t]he Project would not directly or indirectly result in substantial unplanned population growth. Impacts would be less than significant.”¹⁰⁵ Because this baseline is hypothetical and underestimates housing impacts, it must be revised and the DEIR recirculated.

V. THE DEIR FAILS TO ADEQUATELY DISCLOSE AND MITIGATE POTENTIALLY SIGNIFICANT IMPACTS

An EIR must fully disclose all potentially significant impacts of a project, and implement all feasible mitigation to reduce those impacts to less than significant levels. The lead agency’s significance determination with regard to each impact must be supported by accurate scientific and factual data.¹⁰⁶ An agency cannot conclude that an impact is less than significant unless it produces rigorous analysis and concrete substantial evidence justifying the finding.¹⁰⁷

Moreover, the failure to provide information required by CEQA is a failure to proceed in the manner required by CEQA.¹⁰⁸ Challenges to an agency’s failure to proceed in the manner required by CEQA, such as the failure to address a subject required to be covered in an EIR or to disclose information about a project’s environmental effects or alternatives, are subject to a less deferential standard than challenges to an agency’s factual conclusions.¹⁰⁹ In reviewing challenges to an

¹⁰⁴ *Id.*, pg. 4.12-5.

¹⁰⁵ *Id.*, pg. 4.12-6.

¹⁰⁶ 14 CCR § 15064(b).

¹⁰⁷ *Kings Cty. Farm Bur. v. Hanford* (1990) 221 Cal.App.3d 692, 732.

¹⁰⁸ *Sierra Club v. State Bd. Of Forestry* (1994) 7 Cal.4th 1215, 1236.

¹⁰⁹ *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 435.
5297-005j

A-20
(cont)

A-21

COMMENT LETTER A

June 21, 2021
Page 22

agency's approval of an EIR based on a lack of substantial evidence, the court will "determine de novo whether the agency has employed the correct procedures, scrupulously enforcing all legislatively mandated CEQA requirements."¹¹⁰

Even when the substantial evidence standard is applicable to agency decisions to certify an EIR and approve a project, reviewing courts will not "uncritically rely on every study or analysis presented by a project proponent in support of its position. A clearly inadequate or unsupported study is entitled to no judicial deference."¹¹¹

A. The DEIR Fails to Disclose and Mitigate Significant Air Quality Impacts

i. The DEIR Fails to Disclose Significant Air Quality Impacts Concealed by an Erroneous Baseline

SCAQMD has developed regional significance thresholds for regulated pollutants. These pollutants include VOC, NO_x, CO, SO_x, PM₁₀, and PM_{2.5}.¹¹² The SCAQMD's CEQA Air Quality Significance Thresholds (April 2019) indicate that any projects in the South California Air Basin with daily emissions that exceed any of the thresholds should be considered as having an individually and cumulatively significant air quality impact.¹¹³

To assess whether Project would exceed SCAQMD thresholds, the DEIR calculated operational emissions "based on land use types, the number of units or building sizes associated with a project, vehicle trip characteristics, etc. The results are expressed in pounds per day and are compared with the SCAQMD thresholds to determine impact significance."¹¹⁴

However, because the City determined that the proposed Project would replace existing uses, the City applied an "emissions credit" for baseline operational emissions associated with the former retail uses at the Project site which ceased operations in February 2020.¹¹⁵ These operational emissions include emissions

¹¹⁰ *Id.*; *Madera Oversight Coal., Inc. v. County of Madera* (2011) 199 Cal. App. 4th 48, 102.

¹¹¹ *Berkeley Jets*, 91 Cal.App.4th at 1355.

¹¹² DEIR, pg. 4.2-35.

¹¹³ *Id.*, pg. 4.2-24.

¹¹⁴ *Id.*, pg. 4.2-33.

¹¹⁵ *Id.*, pg. 4.2-33.
5297-005j

A-21
(cont)

A-22

COMMENT LETTER A

June 21, 2021
Page 23

associated with architectural coatings, consumer products, landscape maintenance equipment, energy consumption-related emissions, and mobile source emissions.¹¹⁶

The DEIR concludes that, when this emissions credit is subtracted from the estimated Project operational emissions, the net operational emissions of the Project do not exceed SCAQMD regional thresholds, whereas emissions would exceed thresholds without the emissions credit.¹¹⁷ The DEIR also subtracts this emissions credit from the estimated Project operational emissions when determining whether the Project exceeds SCAQMD localized significance thresholds (“LSTs”).

As discussed above, this emissions credit is based on an erroneous baseline that does not reflect existing conditions. Without the emissions credit, the Project exceeds SCAQMD regional thresholds for VOC and NOx in the summer and winter.¹¹⁸ Consequently, substantial evidence shows that the Project should be considered as having an individually and cumulatively significant air quality impact – one that is not acknowledged or mitigated by the City.¹¹⁹

The City’s failure to acknowledge that the Project would exceed SCAQMD regional thresholds impacts several other findings made in the DEIR.

The DEIR concludes that the Project would not conflict with or obstruct implementation of the applicable air quality plan, and this impact would be less than significant (“Impact 2.1”).¹²⁰ The DEIR identifies SCAQMD’s Final 2016 AQMP (“2016 AQMP”) as an applicable air quality plan.¹²¹ Since exceeding SCAQMD’s regional thresholds conflicts with the 2016 AQMP, Impact 2.1 is a significant impact.¹²²

A-22
(cont)

¹¹⁶ *Id.*, pg. 4.2-23.

¹¹⁷ *Id.*, pg. 4.2-35, Table 4.2-13 Summary of Peak Operational Emissions.

¹¹⁸ *Id.*, Table 4.2-13 (“Summary of Peak Operational Emissions”), pg. 4.2-35. (providing that the SCAQMD Regional Threshold for VOC and NOx in the summer and winter is 55 lbs/day. The operational emissions of the Project without the emissions credit applied are 63.18 lbs/day VOC, and 133.14 lbs/day NOx).

¹¹⁹ DEIR, pg. 4.2-24.

¹²⁰ *Id.*, pg. 4.2-29.

¹²¹ *Id.*, pg. 4.2-27.

¹²² *Id.*, pg. 4.2-28.

5297-005j

COMMENT LETTER A

June 21, 2021
Page 24

The DEIR concludes that “[d]uring operation, the Project would not result in a cumulatively-considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or State ambient air quality standard, and impacts would therefore be less than significant” (“Impact 2.2”).¹²³ The DEIR states that “[b]ased on the SCAQMD report on how to address cumulative impacts from air pollution, projects that exceed the Project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable.”¹²⁴ Therefore, the Project’s exceedance of regional thresholds supports the conclusion that Impact 2.2 would be significant. For the same reason, the evidence supports the conclusion that the Project have cumulatively significant air pollution impacts – unacknowledged by the DEIR.¹²⁵

Accurate comparison of the Project’s impacts against LSTs is relevant for assessing whether the Project would expose sensitive receptors to substantial pollutant concentrations.¹²⁶ By erroneously applying an emissions credit for the “existing” facility, the DEIR underestimates exposure of sensitive receptors to substantial pollutant concentrations.¹²⁷ Therefore, when the DEIR concludes in Impact 2.3 that “[t]he Project would not expose sensitive receptors to substantial pollutant concentrations, including localized construction emissions, localized construction emissions, diesel mobile health risks, or CO “Hot Spots”; therefore, impacts would be less than significant,” the DEIR fails to comply with CEQA’s disclosure provisions.¹²⁸

ii. The DEIR Fails to Accurately Analyze the Project’s Construction and Operational Health Risk

. In order to assess the impact of project related emissions, the DEIR included air quality modeling utilizing AERMOD, which is used to assess near-field pollutant dispersion.¹²⁹ Here, the AERMOD model was used to calculate the ground level concentration of DPM emissions associated with the project.¹³⁰ However, Dr.

¹²³ *Id.*, pg. 4.2-36.

¹²⁴ *Id.*, pg. 4.2-52.

¹²⁵ *Id.*

¹²⁶ *Id.*, pg. 4.2-37.

¹²⁷ *Id.*, Table 4.2-15 (“Localized Significance Summary of Operations (Without Mitigation)”), pg. 4.2-39.

¹²⁸ *Id.*, pg. 4.2-51.

¹²⁹ *Id.*, Appendix B2, pg. 17.

¹³⁰ Technical Comments of James Clark (“Clark”), pg. 9.
5297-005j

A-22
(cont)

A-23

COMMENT LETTER A

June 21, 2021
Page 25

James Clark explains that the air dispersion model used for the health risk analysis ("HRA") for the construction and operational phases of the Project has a structural flaw that results in inaccurate estimates of the Project emissions within the community.

Dr. Clark reviewed the City's AERMOD modeling, and noted that the City's use of AERMOD does not account for the impact on emissions from building downwash, rendering the analysis inaccurate. Dr. Clark's comments explain that building downwash occurs as the wind flows over and around buildings and impacts the dispersion of pollution from nearby stacks.¹³¹ A plume caught in the path of this flow is drawn into the wake, temporarily trapping it in a recirculating cavity. This downwash effect leads to higher ground-level concentration of chemicals. The downwash effect increases as the relative difference between the release height and top of the building increases. This effect is well-understood. For example, analysis and mitigation of downwash is discussed in Section 123 of the Clean Air Act.¹³²

The DEIR completely fails to account for this impact in its AERMOD model, nor does it provide any justification why. Dr. Clark reran the AERMOD model to account for this effect by including Buildings 1 and 2 in the air dispersion model, finding that running the model without considering building downwash significantly underestimates the impacts of the project.¹³³

When a standard, accepted methodology is available to assess a significant impact, an EIR must evaluate the impact unless a reasoned basis for not doing so is provided.¹³⁴ In *Berkeley Keep Jets Over the Bay Comm. v. Board of Port Comm'rs*, a court reviewed a DEIR's failure to analyze health risk from TAC exposure. The DEIR claimed that no methodology or standards of significance existed for assessing the health risk from TAC exposure.¹³⁵ The court determined that the lead agency abused its discretion, reasoning that the lead agency failed to consider, in good

A-23
(cont)

¹³¹ *Id.*, pg. 10.

¹³² 42 U.S. Code § 7423 - Stack heights ("For purposes of this section, good engineering practice means, with respect to stack heights, the height necessary to insure that emissions from the stack do not result in excessive concentrations of any air pollutant in the immediate vicinity of the source as a result of atmospheric downwash, eddies or wakes which may be created by the source itself, nearby structures or nearby terrain obstacles").

¹³³ Clark, pg. 9.

¹³⁴ *Berkeley Keep Jets Over the Bay Comm. v. Board of Port Comm'rs* (2001) 91 CA4th 1344, 1370

¹³⁵ *Id.* at 1369.
5297-005j

COMMENT LETTER A

June 21, 2021
Page 26

faith, comments from the public showing that it was feasible to analyze health risk from TAC exposure;¹³⁶

The Port has not cited us to any reasonably conscientious effort it took either to collect additional data or to make further inquiries of environmental or regulatory agencies having expertise in the matter....At the very least, the documents submitted by the public raised substantial questions about the project's effects on the environment and the unknown health risks to the area's residents...the Port has not offered any justification why more definitive information could not have been provided.

Here, the City failed to analyze a critical dispersion factor - building downwash – which affects the rate and severity of exposure to TACs, without explaining why. Dr. Clark's comments show that an AERMOD model can be run to account for building downwash. The City's failure to include this emission factor in its health risk analysis represents a failure to accurately to analyze and disclose the ground level concentration of DPM emissions generated by the Project. The DEIR fails as an informational document in this respect, and must be revised.

iii. Updated Modeling that Accounts for Building Downwash Discloses a Significant Health Risk Impact

Dr. Clark reran the City's AERMOD model to account for building downwash. His updating modeling discloses that ground level concentrations of DPM emissions are underestimated by the DEIR by roughly a factor of 8, and reflect a significant health risk to the community. A table from Dr. Clark's comments highlights these findings:

| Receptor Point | X-Coordinate | Y-Coordinate | No Building Downwash Annual DPM Concentration ($\mu\text{g}/\text{m}^3$) | With Building Downwash Annual DPM Concentration ($\mu\text{g}/\text{m}^3$) |
|----------------|--------------|--------------|--|--|
| 1 | 451034 | 3771266 | 0.00202 | 0.01601 |
| 2 | 451002 | 3771711 | 0.00177 | 0.01406 |
| 3 | 450496 | 3771261 | 0.00152 | 0.01205 |
| 4 | 450496 | 3770991 | 0.00143 | 0.01136 |
| 5 | 450532 | 3771723 | 0.00109 | 0.00862 |

¹³⁶ *Id.* at 1370.
5297-005j

A-23
(cont)

COMMENT LETTER A

June 21, 2021
Page 27

| Receptor Point | X-Coordinate | Y-Coordinate | No Building Downwash Annual DPM Concentration ($\mu\text{g}/\text{m}^3$) | With Building Downwash Annual DPM Concentration ($\mu\text{g}/\text{m}^3$) |
|----------------|--------------|--------------|--|--|
| 6 | 450769 | 3770802 | 0.00091 | 0.00722 |
| 7 | 450375 | 3770784 | 0.00075 | 0.00596 |
| 8 | 450383 | 3771528 | 0.00073 | 0.00576 |
| 9 | 451139 | 3770802 | 0.00051 | 0.00406 |
| 10 | 450327 | 3771924 | 0.00026 | 0.00204 |
| 11 | 451723 | 3773367 | 0.00014 | 0.00108 |
| 12 | 451723 | 3773553 | 0.00013 | 0.00105 |

Table 1.

As shown in the table above, modeling that reflects building downwash discloses annual DPM concentrations roughly 8 times as large as modeling that does not account for building downwash. Annual DPM concentrations at the levels shown above are significant risks to public health.

iv. The Air Dispersion Model Used for The Health Risk Assessment for the Construction Phase of the Project has a Flaw that Underestimates Emissions by at Least 17%.

According to the DEIR, construction equipment is expected to operate on the Project site approximately eight hours per day, six days per week.¹³⁷ In the AERMOD analysis of the construction phase of the project, the City inexplicably analyzed the emissions for only five days per week.¹³⁸ Dr. Clark concluded that the impact of that modeling error is that the City underestimated the Project's construction emissions and, correspondingly, the ground level concentration of diesel particulate matter ("DPM") associated with the Project site by 17%.¹³⁹

v. The DEIR Incorrectly Models Truck Trips in the Health Risk Assessment

To account for the possibility of refrigerated uses at the Project Site, the DEIR states that, for modeling purposes, 81 total daily trucks (one-way) are

¹³⁷ DEIR, pg. 3-38.

¹³⁸ Clark, pg. 10.

¹³⁹ *Id.*

5297-005j

A-23
(cont)

A-24

A-25

COMMENT LETTER A

June 21, 2021
Page 28

assumed to be trucks with transport refrigeration units.”¹⁴⁰ However, the model only reflects 80 trucks with transport refrigeration units per day, one less than the assumed 81 trucks stated in the text.¹⁴¹ This is an error that underestimates health risks, and must be revised in a recirculated DEIR.

B. The DEIR Fails to Disclose Significant GHG Impacts Concealed by an Erroneous Baseline

To determine whether the Project has significant GHG impacts, the Project considers whether the Project would exceed the screening threshold for GHG emissions or generate GHG emissions, either directly or indirectly, that may significantly impact the environment.¹⁴² The DEIR selected the SCAQMD’s adopted numerical threshold of 10,000 MTCO₂e/yr for industrial stationary source emissions as the screening threshold.¹⁴³

The Project’s GHG emissions of 21,285.60 MTCO₂e/yr greatly exceed the 10,000 MTCO₂e/yr significance threshold.¹⁴⁴ However, the Project’s GHG impacts are disguised when a GHG emissions baseline of 18,807.07 MTCO₂e/yr is subtracted.¹⁴⁵ Use of an erroneous baseline to avoid acknowledging large GHG impacts violates CEQA. These significant impacts are entirely unmitigated.¹⁴⁶ The City must revise the DEIR to accurately disclose and mitigate this significant GHG impact.

C. The Project Fails to Analyze Potentially Significant Impacts from Disturbance of Soil Contamination.

The Project’s Phase II investigation is improperly limited in scope, failing to target well-known potential sources of contamination. Dr. Clark’s comments frame the facts here as such: “[t]he Phase II investigation of the site focused solely on chemicals of potential concern (COPCs) associated with known activities or source

A-25
(cont)

A-26

A-27

¹⁴⁰ Urban, Bridge Point Rancho Cucamonga Mobile Source Health Risk Assessment, City of Rancho Cucamonga (April 15, 2021). Pg 10.

¹⁴¹ Clark, pg. 12.

¹⁴² DEIR, pg. 4.7-15.

¹⁴³ *Id.*, pg. 4.7-11.

¹⁴⁴ *Id.*, pg. 4.7-14.

¹⁴⁵ *Id.*

¹⁴⁶ DEIR, pg. 4.7-15.
5297-005j

COMMENT LETTER A

June 21, 2021
Page 29

on site (agricultural COPCs) but failed to assess historic COPCs associated with the largest source of pollution in the area from 1942 through 1983.”¹⁴⁷

The Kaiser Steel Mill was an integrated steel production plant, located less than ½ a mile from the Project site, that the Kaiser Steel Corporation owned and operated from approximately 1942 to 1983.¹⁴⁸ Studies of the steel mill found that it emitted large quantities of carcinogenic compounds that persist in the environment.¹⁴⁹ These contaminants include arsenic, cadmium, benzene, and polycyclic organic matter.¹⁵⁰ Because the Project site is located less than ½ a mile from the steel mill, these contaminants potentially impacted the Project site.

The DEIR does not address whether contaminants from the Kaiser Steel Mill are present on the site due to the limited scope of the Phase II investigation. The subsurface investigation included taking 20 0.5 feet deep samples in the formerly-agricultural northern section of the Project site.¹⁵¹ These samples were tested for pesticides and/or herbicides.¹⁵² The subsurface investigation also included two 15 ft soil borings next to a clarifier on the Project site, which were tested for volatile organic compounds (“VOCs”) and total petroleum hydrocarbons.¹⁵³ Soil sampling for petroleum hydrocarbons and VOCs was previously conducted in the late 1990’s when four underground storage tanks were excavated from the Project site.¹⁵⁴ This sampling was done at the location of the four storage tanks.

Mr. Clark explains that “[t]he COPCs analyzed for by Ardent included volatile organic compounds (VOCs) using U.S. EPA Method 8260B, petroleum hydrocarbons using U.S. EPA Method 8015 modified, as well as U.S. EPA Methods 8141A for organophosphorus compounds and U.S. EPA Method 8091A for organochlorine compounds. These four methods are not appropriate for measuring the COPCs known to have been released from the Kaiser Steel Mill.”¹⁵⁵

A-27
(cont)

¹⁴⁷ Clark, pg. 13.

¹⁴⁸ *Id.*

¹⁴⁹ KVB. 1970. An Inventory Of Carcinogenic Substances Released Into The Ambient Air Of California. Final Report – Task II & IV. Prepared for Science Applications, Inc by R.M. Roberts, KVB, Inc. Energy and Environmental Systems. March, 1980.

¹⁵⁰ Clark, pg. 14.

¹⁵¹ DEIR, Appendix I2, Subsurface Investigation, pg. 3.

¹⁵² *Id.*

¹⁵³ DEIR, Appendix I2, Subsurface Investigation, pg. 2.

¹⁵⁴ *Id.*, Appendix I1, pg. 26.

¹⁵⁵ Clark, pg. 14.

5297-005j

COMMENT LETTER A

June 21, 2021
Page 30

Overall, the scope of the Phase II investigation for the Project is impermissibly narrow. The DEIR fails to analyze for many contaminants potentially present, it fails to collect samples from the vast majority of the 91.4-gross-acre¹⁵⁶ Project site, and it fails to sample for contaminants present at depths that workers will be excavating (up to 26 feet deep).¹⁵⁷ The DEIR fails as an informational document.

A-27
(cont)

i. The City Must Conduct an Analysis of Health and Safety Risks Arising from Disturbance of Contaminated Soil.

In *Cal. Building Industry Ass'n v. Bay Area Air Quality Mgmt. Dist.*,¹⁵⁸ the California Supreme Court held that the disturbance of contaminated soil is a potentially significant impact which requires disclosure and analysis of health and safety impacts in an EIR.¹⁵⁹ The Court explained that “when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users.”¹⁶⁰

A-28

Dr. Clark’s comments provide substantial evidence that carcinogenic compounds might be found on the Project site. If present in the soil of the Project site, contaminants will be disturbed during excavation and construction, presenting a public health risk to construction workers working on the Project, and the public nearby. This risk is a significant impact under CEQA.¹⁶¹ The City must analyze and mitigate the health and safety risks arising from disturbing contaminants in the soil on the Project site.

D. The DEIR Fails to Disclose the Potentially Significant Construction Noise Impacts of the Project

The DEIR analyzes the noise from construction activities in three parts: (1) “typical” construction activities (demolition, grading, utilities/infrastructure, paving, and building construction), (2) nighttime concrete pouring, and (3) on-site concrete crushing. Since construction has not yet occurred, reference noise levels

A-29

¹⁵⁶ DEIR, pg. 3-1.

¹⁵⁷ *Id.*, pg. 4.4-12.

¹⁵⁸ (2015) 62 Cal.4th 369.

¹⁵⁹ 62 Cal.4th at 388-90; 14 CCR § 15126.2(a).

¹⁶⁰ 62 Cal.4th at 377.

¹⁶¹ *Id.* at 388-90; 14 CCR § 15126.2(a).

5297-005j

COMMENT LETTER A

June 21, 2021
Page 31

are used to estimate the noise generated by these activities and the equipment. The DEIR, without providing justification, relies on two different sources for reference noise levels depending on the construction activity. One source is the Federal Highway Administration ("FHWA")'s Roadway Construction Noise Model ("RCNM"), which includes a national database of construction equipment reference noise emission levels.¹⁶² Noise expert Derek Watry explains that the construction noise reference levels contained in the RCNM (along with those published by the Federal Transit Administration which are generally higher) are *de facto* national standards for construction noise analyses.¹⁶³ The other source the DEIR uses is reference noise level measurements taken by the DEIR preparers, Urban Crossroads, Inc.

Mr. Watry compared the Urban Crossroads reference noise levels to the RCNM levels, and found that they are markedly lower.¹⁶⁴

TABLE 2 COMPARISON OF REFERENCE NOISE LEVELS FOR TYPICAL CONSTRUCTION

| Equipment | Phase | DEIR | RCNM | | | Δ Leq | Avg Δ Leq |
|----------------|------------|------|------|-----|------|-----------------|---------------------|
| | | Leq | Lmax | U% | Leq | | |
| Dozer | Demolition | 75.3 | 82 | 40% | 78.0 | 2.7 | 3.7 |
| Scraper | Demolition | 75.3 | 84 | 40% | 80.0 | 4.7 | |
| Grader | Grading | 73.5 | 85 | 40% | 81.0 | 7.5 | 7.5 |
| Concrete Mixer | Paving | 71.2 | 79 | 40% | 75.0 | 3.8 | 6.1 |
| Paver | Paving | 65.6 | 77 | 50% | 74.0 | 8.4 | |
| Crane | Building | 62.3 | 81 | 16% | 73.0 | 10.7 | 10.6 |
| Backhoe | Building | 64.2 | 78 | 40% | 74.0 | 9.8 | |
| Air Compressor | Building | 65.2 | 78 | 40% | 74.0 | 8.8 | |
| Generator | Building | 64.9 | 81 | 50% | 78.0 | 13.1 | |

The DEIR used the lower Urban Crossroads reference noise levels for the "typical" construction noise analysis, and the higher RCNM levels for the concrete crushing analysis.¹⁶⁵ The DEIR provides no rationale, reason, or explanation as to why the lower self-reported level were used for the typical construction noise analysis whereas the higher RCNM levels were used for the concrete crushing

¹⁶² DEIR, Appendix K1, pg. 68.

¹⁶³ Technical Comments of Derek Watry ("Watry"), pg. 3.

¹⁶⁴ *Id.*, pg. 2, "Table 1: Comparison of Reference Noise Levels for Typical Construction." (referenced in these comments as "Table 2").

¹⁶⁵ Watry, pg. 3.

5297-005j

A-29
(cont)

A-30

COMMENT LETTER A

June 21, 2021
Page 32

analysis. The DEIR's reliance on lower noise levels for some construction activities, and higher noise levels for other construction activities is therefore unsupported and potentially arbitrary. Mr. Watry opines that one explanation could be that, by using the lower self-reported reference levels, the DEIR was able to conclude that typical construction noise levels will comply with the applicable standard by use of a 6-foot sound barrier wall, whereas higher noise levels will require greater mitigation.¹⁶⁶

This approach violates CEQA, which requires a good faith effort at full disclosure.¹⁶⁷ Since the City espouses use of RCNM noise reference levels, principles of full disclosure demand that the City disclose that mitigated typical construction noise levels would not comply with the applicable standard when RCNM levels are used. Full disclosure also requires the City to disclose its rationale for inconsistently applying the industry standard RCNM levels. Therefore, the DEIR fails as an informational document.

i. Consistent Use of the RCNM Model Reveals Significant Noise Impacts.

Mr. Watry reran the noise impact analysis, using the RCNM noise reference levels for the construction activities for which the DEIR inexplicably used the Urban Crossroads levels. Mr. Watry concluded that noise levels exceed the adopted standard in all directions for the Project's Demolition and Grading phases and also to the West for the Paving and Building phases, as shown in the table below.¹⁶⁸

TABLE 3 ADJUSTING FOR LOW REFERENCE LEVELS

| Phase | Demo | Grade | U/I | Pave | Build |
|--------------------|------|-------|------|------|-------|
| DEIR Values | | | | | |
| North | 66.4 | 64.6 | 62.7 | 62.3 | 58.6 |
| South | 66.9 | 65.1 | 63.2 | 62.8 | 59.1 |
| East | 62.1 | 60.3 | 58.4 | 58.0 | 54.3 |
| West | 68.9 | 67.1 | 65.2 | 64.8 | 61.1 |

¹⁶⁶ *Id.*, pg. 4.

¹⁶⁷ CEQA Guidelines, § 15151; *see also* *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 406 (*Laurel Heights I*).

¹⁶⁸ Watry, pg. 3, Table 3: Adjusting for Low Reference Levels, (reproduced as Table 3 above).
5297-005j

A-30
(cont)

A-31

COMMENT LETTER A

June 21, 2021
Page 33

| | | | | | |
|-------------------------|-------------|-------------|------|-------------|-------------|
| Add in Avg Δ Leq | 3.7 | 7.5 | N/A | 6.1 | 10.6 |
| Adjusted Value | | | | | |
| North (70 dBA) | 70.1 | 72.1 | 62.7 | 68.4 | 69.2 |
| South (70 dBA) | 70.6 | 72.6 | 63.2 | 68.9 | 69.7 |
| East (65 dBA) | 65.8 | 67.8 | 58.4 | 64.1 | 64.9 |
| West (70 dBA) | 72.6 | 74.6 | 65.2 | 70.9 | 71.7 |

Numbers in red bolded typeface exceed DEIR significance standard (shown in parentheses). All values are dBA Leq.

These significant noise impacts must be disclosed and mitigated in a revised and recirculated DEIR.

E. The DEIR Fails to Disclose Potentially Significant Transportation Impacts

i. The DEIR Misinterprets the Results of Low VMT Area Screening to Avoid Disclosing Significant Transportation Impacts

The DEIR's transportation analysts employed the San Bernardo Transportation Analysis Model ("SBTAM") to perform two methods of map-based screening to determine whether the Project is in a low-VMT area and hence be presumed to have no significant VMT impact.¹⁶⁹ For the first method, SBTAM was used in the origin-destination mode, which found that the Project area did not qualify as a low VMT area.¹⁷⁰ For the second method, SBTAM was used in the production-attraction mode, which found that the Project area did qualify as a low VMT area. Instead of declaring the area screening tests "inconclusive" because of the conflicting results, the DEIR simply states that the Project Area is a low VMT area.¹⁷¹

This approach is inconsistent with CEQA's demand for a good faith effort to disclose impacts.¹⁷² "An EIR should be prepared with a sufficient degree of analysis to provide decisionmakers with information which enables them to make a decision

¹⁶⁹ DEIR, Appendix I.1, pg. 3.

¹⁷⁰ Smith, pg. 2.

¹⁷¹ DEIR, Appendix I.1, pp. 3-4.

¹⁷² *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.* (1988) 47 C3d 376, 392. 5297.005

A-31
(cont)

A-32

COMMENT LETTER A

June 21, 2021
Page 34

which intelligently takes account of environmental consequences.”¹⁷³ Here, the DEIR misrepresents the outcomes of the conflicting tests by stating by simply stating the conclusion of one of them.¹⁷⁴ Also, the DEIR fails to disclose the rationale behind its decision to exclusively rely on the production-attraction mode test, and ignore the results of the origin-destination mode test. The fact that this informational failure results in the masking of significant VMT impacts violates CEQA.

ii. The Project is Not Located in a Low VMT Area, and Has Significant Transportation Impacts

The DEIR provides that, according to City of Rancho Cucamonga Guidelines, “projects that meet certain screening thresholds based on their location and project type may be presumed to result in a less than significant transportation impact.”¹⁷⁵ A land use project need only meet one of three screening criteria to result in a less than significant impact: Transit Priority Area Screening, Low VMT Area Screening, or Project Type Screening.¹⁷⁶ The DEIR acknowledges that the Project does not meet the Transit Priority Area Screening or Project Type Screening.

When SBTAM was used in the origin-destination mode, it found that the Project area generated 34.8 VMT per service population, whereas the overall jurisdiction average was only 32 VMT per service population.¹⁷⁷ Hence, the Project area did not qualify as a low VMT area in that screening test.

Thus, substantial evidence shows that the Project did not meet the Transit Priority Area Screening, Low VMT Area Screening, or Project Type Screening. If the City were to fairly consider the results of the origin-destination mode test for assessing a low VMT area, the City’s analysis would disclose significant transportation impacts.

iii. The DEIR Fails to Disclose the Extent of Significant Transportation Impacts Concealed by an Erroneous Baseline

¹⁷³ 14 Cal Code Regs Section 15151; *Napa Citizens for Honest Gov’t v. Napa County Bd. of Supervisors* (2001) 91 CA4th 342, 356.

¹⁷⁴ Smith, pg. 2.

¹⁷⁵ DEIR, Appendix L1, pg. 2.

¹⁷⁶ *Id.*

¹⁷⁷ Watry, pg. 2.

5297-005j

A-32
(cont)

A-33

COMMENT LETTER A

June 21, 2021
Page 35

The City fails to disclose significant impacts in the Transportation section of the DEIR. In Impact 13.1, the City concludes that “[i]mplementation of the Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. No impact would result and no mitigation is required.”¹⁷⁸ In Impact 13.3, the City concludes “[t]he Project does not involve the introduction of any design features or uses that would substantially increase hazards for motorists, pedestrians, or bicyclists, on the roadways surrounding the Project site. This impact would be less than significant and no mitigation is required.”¹⁷⁹

When analyzing these transportation impacts, the City considered the net trips generated by the Project.¹⁸⁰ This net was calculated by subtracting the estimated trips generated by “existing” uses from the net trips generated by the Project. As discussed above, the DEIR’s trip generation baseline does not reflect existing uses. Mr. Smith explains,

The improper trip generation discounting could substantially alter conclusions of the analysis. In terms of actual vehicles, the improperly discounted trips amount to 44.7 percent of Project trips in the AM peak hour, 69.3 percent of Project trips in the PM peak hour, and 63.1 percent of total daily Project trips. In terms of passenger car equivalences (“PCEs”), the improper discounting amounts to 48.2 percent of Project trip generation in the AM peak hour, 71.2 percent of Project trips in the PM peak hour and 73.4 percent of total daily Project trips. This impropriety in the analysis must be corrected.

Given that the City assessed the Project’s transportation impacts based on a number of trips generated that is sometimes 1/3 the number of the actual number of trips, the DEIR’s findings of no significant impact are not based on substantial

A-33
(cont)

¹⁷⁸ DEIR, pg. 14.13-33.

¹⁷⁹ *Id.*, pg. 4.13-39, 40

¹⁸⁰ *Id.*, pg. 4.13-18 (“The Project is estimated to generate a total of 4,008 actual vehicle trip-ends per day with 318 AM peak hour trips and 339 PM peak hour trips. When taking into consideration the trips associated with the existing industrial warehouse and retail building, the net new trips are 976 trip-ends per day with 176 AM peak hour trips and 104 PM peak hour trips. The Project is also estimated to generate a total of 1,278 PCE net new trip-ends per day with 189 PCE AM peak hour trips and 110 PCE PM peak hour trips”).

5297-005j

COMMENT LETTER A

June 21, 2021
Page 36

evidence. Also, the DEIR's disclosure of transportation impacts is insufficient. The DEIR must be revised and recirculated to include an accurate VMT analysis.

F. The DEIR Fails to Disclose the Significant Energy Consumption Impacts of the Project

The DEIR assesses the Project's consistency with Appendix F of the CEQA Guidelines, which sets a goal of conserving energy by means of (1) decreasing overall per capita energy consumption, (2) decreasing reliance on fossil fuels such as coal, natural gas and oil, and (3) increasing reliance on renewable energy sources.¹⁸¹ The DEIR also compares the Project's energy consumption to other policies and regulations promoting efficient and reduced energy consumption, such as the Integrated Energy Policy Report ("IEPR") and Clean Energy and Pollution Reduction Act of 2015 ("SB 350").¹⁸²

The DEIR presents a skewed image of the Project's energy impacts because it erroneously deducts the "existing" facility's energy consumption from that of the Project. As discussed above, the actual existing energy consumption of the Project site is zero. When assessing the Project's annual traffic fuel consumption, the DEIR subtracts 1,167,387 gallons annually used by the existing facility from the Project's 1,746,328 gallons annually used, erroneously suggesting that the Project's fuel consumption is insignificant.¹⁸³

When assessing the Project site's existing annual operational energy demand, the DEIR estimates it uses 6,195,062 kWh/year of electricity and 99,237,300 kBTU/yr of natural gas.¹⁸⁴ The DEIR subtracts this existing consumption from the Project's projected energy consumption to conclude the Project uses -99,237,300 kBTU/yr of natural gas, and 6,493,374 kWh/year of electricity. The DEIR uses the fact that net electricity consumption is only slightly higher than "existing" uses, and natural gas use is negative, to conclude that the Project is consistent with aforementioned policies and regulations.

This approach represents a failure to accurately disclose the actual impacts of the Project, which is that its electricity consumption of 12,589,434 kWh/year of

¹⁸¹ CEQA Guidelines, Appendix F subd. I.

¹⁸² DEIR, pg. 4.5-3.

¹⁸³ *Id.*, pg. 4.5-23.

¹⁸⁴ *Id.*, pg. 4.5-9.

5297-005j

A-33
(cont)

A-34

COMMENT LETTER A

June 21, 2021
Page 37

electricity is a massive increase over the 0 kWh/year of electricity used by the Project site since February 2020.¹⁸⁵ This increase makes the Project's energy consumption significant under Appendix F of the CEQA Guidelines, which aims to reduce energy consumption.

A-34
(cont)

G. The DEIR Fails to Adequately Analyze and Mitigate Biological Resources Impacts

1. The DEIR Fails to Adequately Assess Burrowing Owl Habitat.

The California Department of Fish and Wildlife ("CDFW") commented on the Project's Notice of Preparation of a Draft Environmental Impact Report, and recommended that the City of Rancho Cucamonga follow the recommendations and guidelines provided in the Staff Report on Burrowing Owl Mitigation (Department of Fish and Game, March 2012).¹⁸⁶ The CDFW letter explains that the Staff Report on Burrowing Owl Mitigation specifies three steps for project impact evaluations: a habitat assessment, surveys; and an impact assessment. A habitat assessment was conducted for the DEIR, but did not follow the recommendations in the CDFW Staff Report.

A-35

The Staff Report provides that "researchers suggest three or more survey visits during daylight hours (Haug and Diduik 1993, CBOC 1997, Conway and Simon 2003) and recommend each visit occur at least three weeks apart during the peak of the breeding season."¹⁸⁷ However, the DEIR's habitat assessment only included a single visit.

The Staff Report provides that researchers recommend "conducting surveys during the day when most burrowing owls in a local area are in the laying and incubation period (so as not to miss early breeding attempts)." However, the DEIR fails to disclose at what time in the day the site visit occurred.

The Staff Report provides that "only individuals meeting the following minimum qualifications should perform burrowing owl habitat assessments, surveys, and impact assessments."¹⁸⁸

A-36

¹⁸⁵ *Id.*, pg. 4.5-24

¹⁸⁶ Letter from CDFW, re: Notice of Preparation of a Draft Environmental Impact Report Bridge Point Rancho Cucamonga Project State Clearinghouse No. 2020100056 (October 27, 2020).

¹⁸⁷ Staff Report on Burrowing Owl Mitigation (Department of Fish and Game, March 2012), pg. 6.

¹⁸⁸ *Id.*, pg. 5.
5297-005j

COMMENT LETTER A

June 21, 2021
Page 38

1. Familiarity with the species and its local ecology;
2. Experience conducting habitat assessments and non-breeding and breeding season surveys, or experience with these surveys conducted under the direction of an experienced surveyor;
3. Familiarity with the appropriate state and federal statutes related to burrowing owls, scientific research, and conservation;
4. Experience with analyzing impacts of development on burrowing owls and their habitat.

The DEIR's habitat assessment states that the habitat assessment was conducted by biologists Thomas J. McGill, Ph.D. and Travis J. McGill, but fails to disclose whether they meet the requirements outlined in the Staff Report.

The City must prepare a revised DEIR that includes a habitat assessment that correctly implements CDFW guidelines, and remedies the above informational defects.

H. The DEIR Fails to Disclose the Project's Inconsistencies with Land Use and Planning Laws and Regulations

According to Appendix G of the CEQA Guidelines, a project will normally have a significant adverse environmental impact on land use and planning if it will cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.¹⁸⁹

i. The DEIR Fails to Disclose the Project's Inconsistencies with the City of Rancho Cucamonga's General Plan

Under California law, a general plan serves as a "charter for future development"¹⁹⁰ and embodies "fundamental land use decisions that guide the future growth and development of cities and counties."¹⁹¹ The general plan has been aptly described as "the constitution for all future developments" within a city

A-36
(cont)

A-37

A-38

¹⁸⁹ CEQA Guidelines, Appendix G §X(b).

¹⁹⁰ *Leshner Communications, Inc. v. City of Walnut Creek* (1990) 52 Cal.3d 531, 54.

¹⁹¹ *City of Santa Ana v. City of Garden Grove* (1979) 100 Cal.App.3d 521, 532.
5297-005j

COMMENT LETTER A

June 21, 2021
Page 39

or county.¹⁹² Further, the “propriety of virtually any local decision affecting land use and development depends upon consistency with the applicable general plan and its elements.”¹⁹³ The consistency doctrine has been described as the “linchpin of California’s land use and development laws; it is the principle which infuses the concept of planned growth with the force of law.”¹⁹⁴

A-38
(cont)

The Project site is located in an area the Rancho Cucamonga General Plan identifies as the Southeast Focus Area. The General Plan states that “[h]eavy industrial uses, primarily steel and pipe manufacturing predominate” in the Southeast Focus Area.¹⁹⁵ The General Plan further provides that “[t]he focus area surrounds Reliant Energy’s Etiwanda Power Plant on Etiwanda Avenue. This area supports the only remaining land in Rancho Cucamonga devoted to heavy industrial uses; these businesses are a valuable source of employment and revenue.”¹⁹⁶

Accordingly, Policy LU-7.1, “Concentrate heavy industrial and utility-related uses in the area immediately surrounding the electrical power plant,” of the General Plan provides:¹⁹⁷

A-39

Historically, more intensive industrial uses have located near the electrical power plant in an area on Etiwanda Avenue, south of Arrow Highway. Continued use of this area for heavy industrial activity will help the City avoid dependency on too narrow a spectrum of industrial and commercial businesses, and some accommodation of heavy industry is important for the City’s economic health and jobs-housing balance.

The Project is inconsistent with Policy LU-7.1, because as the DEIR acknowledges, “[t]he Project does not involve heavy industrial or utility-related uses.”¹⁹⁸ The Project directly conflicts with this policy by proposing a General Plan and Zoning Map Amendment to change the land use designation for the northern part of the Project site from Heavy Industrial to General Industrial. This General

A-40

¹⁹² *Families Unafraid to Uphold Rural El Dorado County v. Board of Supervisors of El Dorado County* (1998) 62 Cal.App.4th 1334, 1335.

¹⁹³ *Citizens of Goleta Valley v. Board of Supervisors of County of Santa Barbara* (1990) 52 Cal.3d 553, 570.

¹⁹⁴ *Corona-Norco Unified School District v. City of Corona* (1993) 17 Cal.App.4th 985, 994.

¹⁹⁵ Rancho Cucamonga General Plan, LU-43.

¹⁹⁶ *Id.*

¹⁹⁷ *Id.*, LU-64.

¹⁹⁸ DEIR, pg. 4.10-19
5297-005j

COMMENT LETTER A

June 21, 2021
Page 40

Plan Amendment would permanently remove limited land surrounding the electrical plant from heavy industrial uses, and thus plainly conflicts with the policy of “[c]oncentrat[ing] heavy industrial and utility-related uses in the area immediately surrounding the electrical power plant.”¹⁹⁹ Numerous heavy industrial and utility uses are still concentrated in the Southeast Focus Area,²⁰⁰ and available Heavy Industry-designated land is limited in availability. The limited availability of Heavy Industry-designated land is evidenced when the DEIR acknowledges that the Southeast Focus Area “supports the only remaining land in Rancho Cucamonga devoted to heavy industrial uses.”²⁰¹ The DEIR also acknowledges, when discussing the feasibility of selecting an alternative site for the Project, that “the majority of the Southeast Focus Area is developed, with the exception of several vacant parcels. There is no large, undeveloped site in this Focus Area that is similar in size to the Project site (approximately 91.4 acres) that can accommodate the same development proposed by the Project.”²⁰² Therefore, the Project and its included General Plan and Zoning Map amendments have significant land use impacts that DEIR does not analyze.

A-40
(cont)

The DEIR claims the Project will not conflict with Policy LU-7.1 because since the NRG Etiwanda Generating Station closed, “there is no longer a need for the immediately surrounding areas to be developed with heavy industrial uses.”²⁰³ This reasoning is contrary to the plainly-stated goals of the General Plan. The DEIR is essentially stating that the policies of the General Plan requiring preservation of heavy industrial uses are outdated, and thus do not need to be complied with. This reasoning is incorrect, as a DEIR cannot pick and choose which elements of the General Plan must be complied with. Since the General Plan plainly requires the concentration of heavy industrial uses around the electrical plant, and avoiding dependency on too narrow a spectrum of industrial and commercial businesses, the DEIR must assess conflict with these policies as they stand.

A-41

¹⁹⁹ Rancho Cucamonga General Plan, LU-64.

²⁰⁰ Rancho Cucamonga General Plan, LU-5 (Tamco Steel and Mission Foods are located in the Southeast Focus Area); Google Maps search (6/21/2021) (Grapeland Peaker Plant, Searing Industries; CMC Steel California, Vega Industries, CMC Rebar, and other heavy industrial businesses are located in the Southeast Focus Area).

²⁰¹ DEIR, pg. 4-3.

²⁰² *Id.* at 5-5.

²⁰³ DEIR, pg. 4.10-19
5297-005j

COMMENT LETTER A

June 21, 2021
Page 41

If anything, the fact that the NRG Etiwanda Generating Station closed since the last update to the General Plan demonstrates the importance of being scrupulous in preserving heavy industrial uses in Ranch Cucamonga. The Southeast Focus Area supports the only remaining land in Rancho Cucamonga devoted to heavy industrial uses, and when this land is converted to other uses, the precarious health of the City's heavy industrial community is threatened.

A-41
(cont)

Consequently, the DEIR's claim that the Project does not conflict with the Rancho Cucamonga General Plan ("General Plan") is not supported by substantial evidence. The City must revisit the DEIR's General Plan consistency analysis and must disclose and mitigate any inconsistencies in a revised DEIR that is circulated for public review and comment.

A-42

ii. The Project Fails to Disclose Potential Conflicts with the City's Tree Preservation Policies

Appendix G of the CEQA Guidelines provides that a project would have a significant effect on the environment if it would "conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance."²⁰⁴

Chapter 17.80, Tree Preservation, of the City of Rancho Cucamonga Development Code, provides for the protection of eucalyptus windrows and heritage trees in the City of Rancho Cucamonga. The DEIR states that there are 125 trees existing on-site that meet the requirements to be considered a heritage tree or are potentially part of a eucalyptus windrow, and there is one tree within the 6th Street at-grade crossing study area that meets the requirements to be a heritage tree.²⁰⁵ The DEIR states that the Project would involve removal of existing trees on the site (100 heritage trees are proposed to be removed).²⁰⁶ The DEIR states that it will obtain a tree removal permit, as is required by 17.16.080(D) of the Development Code, and thus, "[n]o impact would occur related to conflict with tree protection policies or ordinances."²⁰⁷

A-43

²⁰⁴ CEQA Guidelines, Appendix G, Section IV(e)

²⁰⁵ DEIR, pg. 4.3-30.

²⁰⁶ *Id.*, pg. 3-24.

²⁰⁷ *Id.*, pg. 4.3-30.

5297-005j

COMMENT LETTER A

June 21, 2021
Page 42

The DEIR fails to disclose an evidentiary basis for this conclusion, as the DEIR fails to analyze the Project's consistency with numerous tree preservation provisions in the City of Rancho Cucamonga's Development Code.

Section 17.16.080(I)(2) of the Development Code outlines the requirements for obtaining a Tree Removal Permit associated with a proposal for development:

Where an application for a tree removal permit is associated with a proposal for development or is on private property and involves greater than five trees or more than 50 linear feet of windrow, the planning director shall consider the following:

- The condition of the tree(s) with respect to disease, danger of collapse of all or any portion of the tree(s), proximity to an existing structure, or interference with utility services.
- The necessity to remove a tree in order to construct improvements which allow economic enjoyment of the property.
- The number of trees existing in the neighborhood, and the effect the removal would have on the established character of the area and the property values.
- Whether or not the removal of the tree(s) is necessary to construct required improvements within the public street right-of-way or within a flood control or utility right-of-way.
- Whether or not the tree could be preserved by pruning and proper maintenance or relocation rather than removal.
- Whether or not such tree(s) constitute a significant natural resource of the city.
- Whether or not such trees are required to be preserved by any specific plan, community plan, condition of approval, or designation as a historic landmark.

The DEIR has failed to disclose information pertaining to these factors, and failed to analyze consistency with these factors. The above provision states "the planning director *shall* consider" these factors, meaning that evidence must be provided on these factors in order to receive a tree removal permit [emphasis added].²⁰⁸ Therefore, the DEIR lacks substantial evidence to conclude that "[n]o impact would occur related to conflict with tree protection policies or ordinances,"

²⁰⁸ City of Rancho Cucamonga Development Code, Section 17.16.080(I)(2)
5297-005j

A-43
(cont)

COMMENT LETTER A

June 21, 2021
Page 43

and misrepresents whether the Project would conflict with local tree preservation policies.²⁰⁹

Rancho Cucamonga's tree preservation policy also requires the Project to meet certain findings in order receive a tree removal permit. Section 17.16.080(J) of the Development Code provides that the planning director "shall approve, or approve with conditions, an application for a tree removal permit after finding all of the following:

- For a development project, every effort has been made to incorporate the tree(s) into the design of the project and the only appropriate alternative is the removal of the tree;
- For requests not associated with a development project, the tree presents a threat to public health and safety and must be removed; and
- The removal of the tree will not have a negative impact on the health, safety, or viability of surrounding trees, nor will it negatively impact the aesthetics or general welfare of the surrounding area.

The DEIR fails to provide substantial evidence suggesting it meets these findings. For example, the DEIR lacks analysis of whether "every effort has been made to incorporate the tree(s) into the design of the project." This lack of disclosure is significant, as substantial evidence suggests that the Project would fail to meet these necessary findings. The DEIR's conceptual landscape plan would only incorporate 24 of the 126 existing heritage trees, and remove the rest.²¹⁰ A more protective landscaping plan would relocate heritage trees already existing on the site, instead of purchasing new trees.

The DEIR fails to present substantial evidence to support the findings required for a Tree Removal Permit. The DEIR must be revised to adequately analyze potentially significant tree preservation impacts, and recirculated.

iii. The DEIR Fails to Disclose Conflicts with Requirements for Approval of Development Agreement

Section 17.22.060 of the City of Rancho Cucamonga Development Code establishes procedures and requirements for the review and approval of

²⁰⁹ DEIR, pg. 4.3-30.

²¹⁰ DEIR, pg. 3-24, Figure 3-13 (stating that 100 existing heritage trees are proposed to be removed).
5297-005j

A-43
(cont)

A-44

COMMENT LETTER A

June 21, 2021
Page 44

development agreements. A development agreement may only be granted when the city council makes all of the following findings specifying that the development agreement:²¹¹

- Is consistent with the objectives, policies, and general land uses specified in the general plan and any applicable specific plans.
- Is compatible and in conformity with public convenience, general welfare, and good land use and zoning practice.
- Will not be detrimental to the health, safety, and general welfare of the city.
- Will not adversely affect the orderly development of property or the preservation of property values.

The Project is inconsistent with the above criteria. The Project fails to meet the first criterion because the Project plainly conflicts with Policy LU-7.1 of the General Plan. The Project fails to meet the second and third criterion because the Project has numerous potentially significant unmitigated impacts. For example, the Project's excess construction DPM emissions and construction noise impacts are detrimental to public health, safety and welfare.

The DEIR fails to disclose these conflicts with these necessary findings, which is a violation of CEQA's disclosure requirements. The DEIR fails to provide any evidence that would counteract or counterbalance these conflicts. The City therefore lacks substantial evidence to support the findings necessary to approve a development agreement. The DEIR must be revised to adequately analyze the above findings, and recirculated.

VI. THE PROJECT FAILS TO COMPLY WITH THE SUBDIVISION MAP ACT

The Project includes a Tentative Parcel Map to subdivide the existing single legal parcel into two parcels that facilitate implementation of the proposed site plan.²¹²

The DEIR fails to analyze this component of the Project. The DEIR therefore lacks substantial evidence to support the Map Act's required factual findings to approve the Tentative Parcel Map, which require the City to find that a proposed

²¹¹ Development Code, Section 17.22.060(D).

²¹² DEIR, pg. 3-4.
5297-005j

A-44
(cont)

A-45

A-46

A-47

A-48

COMMENT LETTER A

June 21, 2021
Page 45

subdivision is consistent with the general plan/specific plan, and does not have any detrimental environmental or public health effects.²¹³ In addition, as discussed in Section V above, there is substantial evidence demonstrating that the Project is likely to have, potentially significant impacts on air quality, GHGs, soil contamination, noise, transportation, energy, land use and planning, and biological resources. These impacts are not adequately mitigated in the DEIR. As a result of these unmitigated impacts, the Project fails to comply with mandatory Map Act requirements and the City cannot make the requisite findings to approve the Project's Tentative Parcel Map.

The purpose of the Map Act is to regulate and control design and improvement of subdivisions with proper consideration for their relation to adjoining areas, to require subdividers to install streets and other improvements, to prevent fraud and exploitation, and to protect both the public and purchasers of subdivided lands.²¹⁴ Before approving a tentative map, the Map Act requires the agency's legislative body to make findings that the proposed subdivision map, together with the provisions for its design and improvement, is consistent with the general plan and any specific plan.²¹⁵ The Map Act also requires the agency's legislative body to deny a proposed subdivision map in any of the following circumstances:²¹⁶

- (a) the proposed map is ***not consistent with applicable general and specific plans*** as specified in Section 65451.
- (b) the design or improvement of the proposed subdivision is ***not consistent with applicable general and specific plans***.
- (c) the site is not physically suitable for the type of development.
- (d) the site is not physically suitable for the proposed density of development.
- (e) the ***design of the subdivision or the proposed improvements are likely to cause substantial environmental damage or substantially and avoidably injure fish or wildlife or their habitat***.
- (f) the ***design of the subdivision or type of improvements is likely to cause serious public health problems***.

²¹³ Gov Code §§66473.5, 66474.

²¹⁴ *Pratt v. Adams* (1964) 229 Cal.App.2d 602.

²¹⁵ Gov Code § 66473.5.

²¹⁶ Gov. Code § 66474 (emphasis added).
5297-005j

A-48
(cont)

COMMENT LETTER A

June 21, 2021
Page 46

(g) the design of the subdivision or the type of improvements will conflict with easements, acquired by the public at large, for access through or use of, property within the proposed subdivision.

CARECA's experts have provided substantial evidence demonstrating that the Project is likely to have significant, unmitigated impacts on air quality from excess emissions that exceed SCAQMD thresholds; on public health from excess cancer risk from the Project's construction DPM emissions and risk of disturbing soil contamination; on the environment and public health from excess construction noise and traffic; and on the climate from excess GHG emissions and energy consumption. These impacts demonstrate that the Project, as analyzed in the DEIR, fails to comply with the General Plan, is "likely to cause substantial environmental damage," and "is likely to cause serious public health problems."²¹⁷ These unmitigated impacts render the Project inconsistent with Map Act requirements. The Map Act therefore requires the City to deny the Project's Tentative Parcel Map pursuant to Government Code Sections 66473.5 and 66474(a), (b), (e), and (f).

VII. CONCLUSION

The DEIR is inadequate and must be withdrawn. We urge the City to prepare and circulate a revised DEIR which includes an accurate Project description and baseline upon which to measure the whole Project's reasonably foreseeable impacts. The revised DEIR must also identify all of the Project's potentially significant impacts, and require all feasible mitigation measures to reduce the Project's significant environmental and public health and safety impacts. We thank you for the opportunity to provide these comments on the DEIR.

Sincerely,



Aidan P. Marshall

APM:ljl

²¹⁷ Gov. Code §§ 66474(a), (b), (e), and (f).
5297-005j

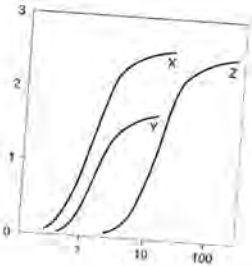
A-48
(cont)

A-49

COMMENT LETTER A

EXHIBIT A

COMMENT LETTER A



Clark & Associates
Environmental Consulting, Inc.

OFFICE
12405 Venice Blvd
Suite 331
Los Angeles, CA 90066

PHONE
310-907-6165

FAX
310-398-7626

EMAIL
jclark.assoc@gmail.com

June 21, 2021

Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080

Attn: Mr. Aidan P. Marshall

**Subject: Comment Letter on Draft Environmental Impact Report
(DEIR) For The Bridge Point Rancho Cucamonga
Project, in the City of Rancho Cucamonga, California
SCH No. 2020100056**

Dear Mr. Marshall:

At the request of Adams Broadwell Joseph & Cardozo (ABJC), Clark and Associates (Clark) has reviewed materials related to the 2021 City of Rancho Cucamonga (the City) DEIR of the above referenced project. The Project includes the replacement of the existing 23,240 square foot retail building and 1,431,000 square foot warehouse building formerly occupied by Big Lots with two new contemporary warehouse buildings (Buildings 1 and 2) with a combined building area, including the mezzanine space, of approximately 2,175,000 sf consisting of 2,134,000 sf of warehouse uses and 41,000 square feet of ancillary office space. According to the City's DEIR for purposes of analysis in the Draft EIR, it was assumed that up to 90 percent of the building square footage would consist of a high-cube warehouse, and 10 percent would consist of a high-cube cold storage warehouse.

Clark's review of the materials in no way constitutes a validation of the conclusions or materials contained within the DEIR. If we do not comment on a specific item, this does not constitute acceptance of the item.

A-50

1 | Page

COMMENT LETTER A

Project Description:

The approximately 91.4-acre Project site is located at located at 12434 4th Street in the City of Rancho Cucamonga, San Bernardino County, California. The Project site is bound by 4th Street to the south (which is also the jurisdictional boundary between the City of Rancho Cucamonga and the City of Ontario) and 6th Street to the north, and generally located between Etiwanda Avenue to the east and Santa Anita Avenue to the west. Access to the Project site is provided from existing driveways along 4th Street and 6th Street. The Project site is located approximately 0.5-mile east of Interstate (I)-15 and 0.7-mile north of I-10.

The Project site is surrounded by developed areas that are designated for Heavy Industrial and General Industrial land use designations and zone classifications. A Southern California Edison (SCE) facility is located to the north of the Project site (across 6th Street). The San Bernardino County West Valley Detention Center (a short-term County jail facility) is located to the east (west of Etiwanda Avenue). South of the Project site, across 4th Street, are light industrial/warehouse uses in the Crossroads Business Park Specific Plan area of the City of Ontario. There are no residential uses in the Project vicinity.

The Project will involve the removal of the existing structures, landscaping, and associated improvements on the Project site, and the redevelopment of the Project site with two new contemporary industrial warehouse buildings (Building 1 and Building 2). The new buildings would be high-cube warehouses primarily used for the storage and/or consolidation of manufactured goods, with a maximum height of 50 feet. The total building area would be approximately 2,175,000 sf. There would be approximately 2,136,200 square feet (sf) of ground level floor space and approximately 33,230 sf of mezzanine, which could be used for ancillary office or warehouse space. Building 1 would include approximately 1,422,500 sf of floor area (approximately 25,000 sf of ancillary office space and 1,397,500 sf of warehouse space), and Building 2 would include approximately 752,500 sf of floor area (approximately 16,000 sf of ancillary office space and 736,500 sf of warehouse space).

A-50
(cont)

COMMENT LETTER A

General Comments:

The environmental issues areas identified for study in the DEIR included: aesthetics, air quality, biological resources, cultural resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, population and housing, transportation, tribal cultural resources, utilities and service systems. Flaws in the DEIR's analysis of baseline conditions of the project site make the air quality and GHG analyses invalid. Errors in the air quality analysis must be corrected by the City and the impacts re-evaluated in a revised environmental impact report (REIR).

A-51

Specific Comments:

1. The City Has Failed To Accurately Assess The Baseline Conditions From The Existing Project Site. After Correcting The Baseline Conditions It Is Clear That The Project Will Result In Significant Criteria Air Pollutant And Greenhouse Gas (GHG) Emissions.

The City has incorrectly assessed the baseline conditions at the project site. The air quality analyses of criteria pollutant and greenhouse gas (GHG) emissions rely on the traffic analysis of the DEIR which has a significant flaw. The environmental baseline must reflect the physical conditions existing at the time environmental analysis was begun.¹

For purposes of the air quality analysis and GHG analysis presented DEIR, the City assumed in the DEIR that the site was still an active distribution and retail center despite the fact that the site was vacated as of February 2020. From the aerial photos below (Figure 1) it is evident that no operations were present at the site during 2020. The red boxes on each photo show the parking areas associated with the project site. In the photograph on the left the presence of vehicles and cargo trailers is evident. In the photograph on the right no vehicles or cargo trailers are evident. The environmental review of the site only began on October 2, 2020. Thus, the baseline must reflect the current, unused state of the Project site at the time of the environmental review.

A-52

¹ *Communities for a Better Environment v. South Coast Air Quality Management District* (2010) 48 Cal. 4th 310, 321

COMMENT LETTER A

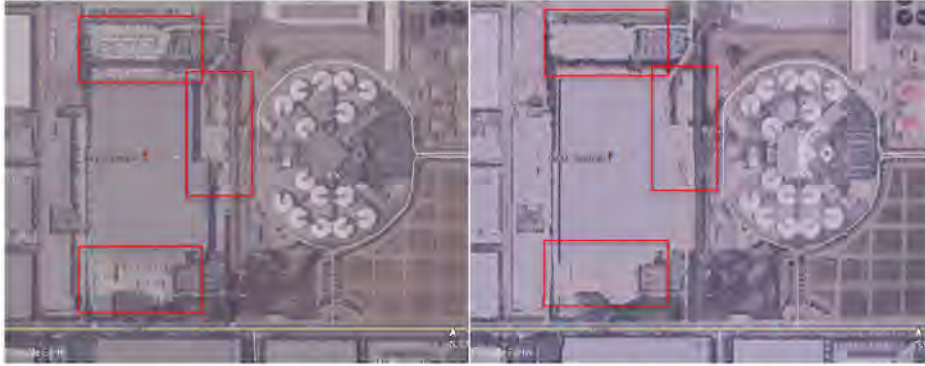


Figure 1: Aerial Photographs of Project Site Location 08/2018 and 04/2020

In Impact Analysis of the Projects Air Quality Analysis (Impact 2.1) the City argues that the “Project’s net operational emissions would not exceed the applicable SCAQMD regional thresholds or LST thresholds, and the Project’s construction and operational characteristics would not exceed the assumptions in the AQMP based on the years of Project build-out phase.... Thus, Project-related construction activities have the potential to result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations or delay the timely attainment of air quality standards or the interim emissions reductions specified in the 2016 AQMP, resulting in a potentially significant impact.”

To determine the baseline emissions the City utilizes the same approach for the baseline condition as for the new operational phase of the project. In the Bridge Point Rancho Cucamonga High-Cube Fulfillment Center Traffic Memo, prepared by Urban Crossroads (Appendix L2 of the DEIR), it is noted the trip generation and trip distributions applicable to the High-Cube Fulfillment Center Non-Sort and Sort based analyses are based upon information collected by the ITE as provided in their Trip Generation Manual, 10th Edition, 2017. The memo details that the project site is currently developed with a 1,431,000 square foot High-Cube and Short-Term Storage Warehouse (Without Cold Storage) and a 23,240 square foot Free-Standing Discount Store but does not state that the site has been vacant for at least a year at the time of the memo’s preparation. The memo’s use of “Actual” in the Existing Trip Generation Summary table in Attachment C – Trip Generation of Appendix L2 is misleading. The actual number of trips is zero based on the operations of the site from February, 2020 onward, not the speculative values presented in the Traffic Memo as the baseline operational values.

A-52
(cont)

COMMENT LETTER A

This misrepresentation allows the City to claim that the net difference between the current operations and future operations will not result in emissions above the SCAQMD Significance Thresholds for criteria pollutants and GHGs.

It is clear that the assumptions from the City regarding the baseline use of the property do not comport with the reality of the operations at the project site from February, 2020 onwards. The actual operational emissions from the project should be compared to the CEQA significance threshold levels for criteria pollutants. Table 3-12 of Appendix B-1 and Table 4.2-13 of the DEIR must be corrected to show that the operational emissions will exceed the SCAQMD's VOC and NOx significance thresholds. Emissions of NOx are primarily (approximately 86 percent of the total NOx emissions) associated with trucks utilizing the site. The City must also correct its assessment of Impact 2.1 to reflect that the operational emissions would exceed the applicable SCAQMD regional thresholds and that any mitigation measures to be introduced would focus on the primary source of NOx emissions.

A-52
(cont)

COMMENT LETTER A

| Source | Emissions (lbs/day) | | | | | |
|--------------------------------------|---------------------|-----------------|---------------|-----------------|------------------|-------------------|
| | VOC | NO _x | CO | SO _x | PM ₁₀ | PM _{2.5} |
| Summer | | | | | | |
| Area Source | 49.28 | 3.69E-03 | 0.40 | 3.00E-05 | 1.44E-03 | 1.44E-03 |
| Mobile Source (Passenger Cars) | 9.44 | 8.59 | 142.42 | 0.41 | 43.99 | 11.80 |
| Mobile Source (Trucks) | 3.97 | 122.18 | 34.13 | 0.52 | 20.09 | 6.45 |
| On-Site Equipment Source | 0.23 | 2.11 | 2.31 | 3.06E-03 | 0.14 | 0.13 |
| TRUs | 1.03 | 8.79 | 11.44 | 0 | 0.21 | 0.19 |
| Total Maximum Daily Emissions | 63.96 | 141.67 | 190.71 | 0.94 | 64.44 | 18.58 |
| SCAQMD Regional Threshold | 55 | 55 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | Yes | Yes | No | No | No | No |
| Winter | | | | | | |
| Area Source | 49.28 | 3.69E-03 | 0.40 | 3.00E-05 | 1.44E-03 | 1.44E-03 |
| Mobile Source (Passenger Cars) | 8.85 | 9.11 | 120.18 | 0.38 | 43.99 | 11.80 |
| Mobile Source (Trucks) | 3.67 | 125.00 | 24.55 | 0.52 | 20.02 | 6.42 |
| On-Site Equipment Source | 0.23 | 2.11 | 2.31 | 3.06E-03 | 0.14 | 0.13 |
| TRUs | 1.03 | 8.79 | 11.44 | 0 | 0.21 | 0.19 |
| Total Maximum Daily Emissions | 63.07 | 145.01 | 158.89 | 0.90 | 64.36 | 18.55 |
| SCAQMD Regional Threshold | 55 | 55 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | Yes | Yes | No | No | No | No |

Additionally, the City must correct the error on Table 4.2.13: Summary of Peak Operational Emissions of the DEIR which incorrectly assumes that TRUs onsite will emit 0.26 lbs per day of VOC, NO_x, CO, SO_x, PM₁₀, and PM_{2.5} for both the summer period and the winter period.

A-53

COMMENT LETTER A

Finally, the City must correct Table 4.7-6 Project GHG Emissions to reflect the actual operational emissions of GHGs and not the net difference assumed in the DEIR.

| Emission Source | Emissions (MT/yr) | | | |
|---|-------------------|-----------------|------------------|------------------------|
| | CO ₂ | CH ₄ | N ₂ O | Total CO _{2e} |
| Annual construction-related emissions amortized over 30 years | 184.31 | 0.02 | 0.00 | 184.86 |
| Area Source | 0.10 | 2.60E-04 | 0.00 | 0.10 |
| Energy Source | 4,011.26 | 0.17 | 0.03 | 4,025.61 |
| Mobile Source (Passenger Car) | 6,338.45 | 0.15 | 0.00 | 6,392.19 |
| Mobile Source (Truck) | 9,509.89 | 0.65 | 0.00 | 9,526.21 |
| On-Site Equipment Source | 49.02 | 0.02 | 0.00 | 49.41 |
| TRUs | - | - | - | 49.21 |
| Waste | 415.02 | 24.53 | 0.00 | 1,028.18 |
| Water Usage | 24.11 | 0.18 | 4.34E-03 | 29.82 |
| Total CO_{2e} (All Sources) | 21285.59 | | | |
| Screening Threshold (CO_{2e}) | 10000 | | | |
| Threshold Exceeded? | Yes | | | |

A-54

After correcting Table 4.7-6, the City must correct Impact 7.1 to reflect that the project would exceed the SCAQMD's Significance Threshold for GHGs in the RDEIR. The City must also require mitigation measures to reduce the operational emissions of the significant GHG emissions from the project.

2. The Air Dispersion Model Used For The Health Risk Assessment For The Construction And Operational Phases Of The Project Has Two Structural Flaws That Result In Inaccurate Estimates Of The Project Emissions Within The Community

According to Appendix B-2 of the DEIR,² model Receptors were placed at structure locations for residential, worker and school-based properties representing the preponderance of time individuals spend within a given residence, occupational and/or institutional setting. Impacts to residents or workers located further away from the Project site than the modeled receptors would have a lesser

A-55

² Urban. 2021. Bridge Point Rancho Cucamonga Mobile Source Health Risk Assessment, City of Rancho Cucamonga. Dated April 15, 2021. Pg 19.

COMMENT LETTER A

impact than what has already been disclosed in the HRA at the MEIR, MEIW and MEISC. SCAQMD guidance does not require assessment of the potential health risk to on-site workers.³ However, CEQA requires a detailed analysis of the health risk posed to all people who may be adversely affected by the Project's toxic air emissions.

EXHIBIT 2-F: Modeled Receptors



The modeling approach is significantly flawed on two accounts. The first flaw is that the model does not account for the impact on emissions from building downwash. The AERMOD model calculates the ground level concentration of DPM emission associated with the project. According to

³ Urban. 2021. Bridge Point Rancho Cucamonga Mobile Source Health Risk Assessment, City of Rancho Cucamonga. Dated April 15, 2021. Pg 10.

COMMENT LETTER A

the DEIR, based on the conceptual site plan, it is assumed the building height would reach a maximum of 50 feet at the top of parapet.⁴ In addition, the immediate vicinity around the project site contains a number of other warehouses in the vicinity (in particular along the routes for vehicles to enter and exit the project site). The assumed height of release for emissions from idling trucks is assumed to be 4.15 meters (13.6 feet) well below the height of the building. The release height for DPM from trucks traveling along the streets is assumed to be at the ground surface (0 meters or 0 feet).

Building downwash occurs as the wind flows over and around buildings and impacts the dispersion of pollution from nearby stacks. A plume caught in the path of this flow is drawn into the wake, temporarily trapping it in a recirculating cavity. This downwash effect leads to higher ground-level concentration of chemicals emitted from sources. The downwash effect increases as the relative difference between the release height and top of the building increases (the so called good engineering practice height (GEP) of the source. The GEP is defined in Section 123 of the Clean Air Act as “the height necessary to insure that emissions from a stack do not result in excessive concentrations of any air pollutant in the immediate vicinity of the source as a result of atmospheric downwash, eddies or wakes which may be created by the source itself, nearby structures or nearby terrain obstacles.”). For the closest receptors to the site, this difference will create an additional air quality impact that is not accounted for in the City’s analysis. In addition to incorporating the building downwash impacts of the Project buildings, the AERMOD model should also incorporate the building downwash for receptors near the project. Receptors farther away will still be subject to the downwash effect given the assumed emission height release incorporated into the model. SCAQMD guidance regarding the preparation of health risk assessments of mobile sources of diesel emissions⁵, requires the inclusion of building heights and dimensions for building downwash calculations. Omission of the building downwash effect underestimates the exposure point concentrations for receptors near the building(s).

According to the design drawings included in the DEIR⁶, the reliable estimate of the building height near the loading docks places the building height at approximately 44 feet above grade. Using the input file included from the DEIR of the air dispersion model for the operations at the site, I have

A-56
(cont)

⁴ City of Rancho Cucamonga. 2021. Draft Environmental Impact Report SCH Number 2020100056, Bridge Point Rancho Cucamonga. Dated May, 2021. Pg 3-10 through 3-11.

⁵ SCAQMD. 2003. Health Risk Assessment Guidance For Analyzing Cancer Risks From Mobile Source Diesel Emissions. August, 2003. Page 2.

⁶ City of Rancho Cucamonga. 2021. Draft Environmental Impact Report SCH Number 2020100056, Bridge Point Rancho Cucamonga. Dated May, 2021. Pg 3-10 through 3-11.

COMMENT LETTER A

rerun the model to show the impact of not including the buildings (1 and 2) in the air dispersion model. The results of both model runs are included as an appendix to this comment letter. The table below shows the annual average concentrations of DPM with the building in place are approximately 8-times higher than the concentrations modeled when the building is not in place. It is evident that running the model without considering building downwash will significantly underestimate the impacts of the project on the community.

| Receptor Point | X-Coordinate | Y-Coordinate | No Building Downwash Annual DPM Concentration ($\mu\text{g}/\text{m}^3$) | With Building Downwash Annual DPM Concentration ($\mu\text{g}/\text{m}^3$) |
|----------------|--------------|--------------|--|--|
| 1 | 451034 | 3771266 | 0.00202 | 0.01601 |
| 2 | 451002 | 3771711 | 0.00177 | 0.01406 |
| 3 | 450496 | 3771264 | 0.00152 | 0.01205 |
| 4 | 450496 | 3770991 | 0.00143 | 0.01136 |
| 5 | 450532 | 3771723 | 0.00109 | 0.00862 |
| 6 | 450769 | 3770802 | 0.00091 | 0.00722 |
| 7 | 450375 | 3770784 | 0.00075 | 0.00596 |
| 8 | 450383 | 3771528 | 0.00073 | 0.00576 |
| 9 | 451139 | 3770802 | 0.00051 | 0.00406 |
| 10 | 450327 | 3771924 | 0.00026 | 0.00204 |
| 11 | 451723 | 3773367 | 0.00014 | 0.00108 |
| 12 | 451723 | 3773553 | 0.00013 | 0.00105 |

A-56
(cont)

The second flaw, the limited number of receptors creates a false sense of precision within the model. This method reduces the run time (computing time necessary to complete the analysis) but creates an implied impression that cannot be extrapolated into the community. The City must include addition receptor grids to analyze the air quality impacts throughout the community not just to a limited set of receptors. According to SCAQMDs guidance,⁷ "The receptor grid (sic, the number of receptors to run in the model) should begin at the facility fence line or transportation right-of-way and extend to an adequate distance from the site to cover the facility's impact area. The peak annual DPM concentrations should be identified using 100-meter receptor grid. A map showing the emission sources and the receptor grid with actual coordinates used in the modeling should be provided. Discrete receptors should also be located at sensitive receptors (e.g., schools, day-care centers,

A-57

⁷ SCAQMD. 2003. Health Risk Assessment Guidance For Analyzing Cancer Risks From Mobile Source Diesel Emissions. August, 2003. Page 72.

A-57
(cont)

A-58

[illegible]

COMMENT LETTER A

The impact of that modeling error is that the City has underestimated the emissions and ultimately the ground level concentration of diesel particulate matter (DPM) associated with the project site by seventeen percent (17% or 1/7). The risk values calculated for the Operational Phase of the project are at least 17% higher than those calculated by the City. The City must correct this error in the air quality and health risk analysis and present the results in a revised environmental impact report (REIR).

A-58
(cont)

4. The Air Dispersion Model Used For The Health Risk Assessment For The Operational Phase Of The Project Has A Computational Flaw That Overestimates The Emissions From TRU's Used Onsite By A Factor Of 5.

The Air Quality Analysis of Operations presented in Appendix B-2 of the DEIR has several computational errors that make the model inaccurate and also impact the health risk assessment for the air quality analysis. The City must correct these errors to insure that an accurate evaluation of the potential health risks is presented in the DEIR.

According to the Health Risk Assessment Based on the Bridge Point Rancho Cucamonga High-Cube Fulfillment Center Traffic Memo (TM) prepared by Urban Crossroads, Inc., the Project is expected to generate a total of approximately 4,008 two-way vehicular trips per day (2,004 inbound and 2,004 outbound), including 536 two-way truck trips per day (268 inbound and 268 outbound).

The health risk assessment study evaluates the potential impacts resulting from DPM exhaust from the 536 two-way truck trips generated by the Project and discriminates in its analysis between on-road emissions and emissions from vehicles while idling. The report notes that idling was assumed to occur for 15 minutes (1/4 of an hour) instead of the mandated 5-minute interval from CARB. This "conservative" assumption was intended to be health protective. The model also discriminates between normal warehouse operations and cold storage operations. To account for the possibility of refrigerated uses at the Project Site, the Air Quality Analysis of Operations presented in Appendix B-2 of the DEIR, notes "that trucks associated with the cold-storage land use are assumed to also have TRUs (transport refrigeration units). Therefore, for modeling purposes 81 total daily trucks (one-way) are assumed to be trucks with TRUs."⁸ In Table 2-4: DPM Emissions From Project Trucks (Cold

A-59

⁸ Urban. 2021. Bridge Point Rancho Cucamonga Mobile Source Health Risk Assessment, City of Rancho Cucamonga. Dated April 15, 2021. Pg 10.

COMMENT LETTER A

Storage), the City lists 14 trucks each for Onsite Idling A and B (the north and south loading docks for Building 2) and 26 trucks each for Onsite Idling C and D (the north and south loading docks for Building 1). This totals 80 trucks per day, one less than the assumed 81 trucks stated in the text.

TABLE 2-4: DPM EMISSIONS FROM PROJECT TRUCKS (COLD STORAGE)

| | Trucks Per Day | VMT ^a (miles/day) | Truck Emission Rate ^b (g/minute) | Truck Emission Rate ^c (g/minute-hour) | Daily Truck Emissions ^d (grams/day) | Modeled Emission Rates ^e (grams/day) |
|---|----------------|------------------------------|---|--|--|---|
| Onsite Idle A (Building 2 northern loading docks) | 14 | | | 0.1444 | 2.57 | 2.979E-05 |
| Onsite Idle B (Building 2 southern loading docks) | 14 | | | 0.1444 | 2.57 | 2.977E-05 |
| Onsite Idle C (Building 1 northern loading docks) | 26 | | | 0.1444 | 4.75 | 5.529E-05 |
| Onsite Idle D (Building 1 southern loading docks) | 26 | | | 0.1444 | 4.75 | 5.529E-05 |
| Onsite Travel (Onsite Travel truck traffic on Street A) | 102 | 225.15 | 0.07063 | | 10.98 | 1.803E-04 |
| Freight Blvd. East to Edwards Ave. 1/5th 10% Outbound | 5 | 2.13 | 0.01053 | | 0.11 | 1.274E-06 |
| Edwards Ave. South to 4th St. 1/5th 10% Outbound | 5 | 2.13 | 0.01053 | | 0.11 | 1.043E-06 |
| 4th St. West from Edwards Ave. 1/5th 10% Outbound | 5 | 2.13 | 0.01053 | | 0.10 | 1.213E-06 |
| San Bernardino Ave. West to Edwards Ave. 1/5th 10% Outbound | 4 | 2.13 | 0.01053 | | 0.10 | 3.089E-07 |
| 4th St. West from Edwards Ave. 1/5th 10% Outbound | 45 | 21.13 | 0.01053 | | 0.66 | 7.424E-06 |
| Edwards Ave. North to 4th St. 1/5th 10% Outbound | 45 | 21.13 | 0.01053 | | 0.66 | 7.893E-06 |
| 4th St. East from 4th St. 1/5th 10% Outbound | 24 | 11.06 | 0.01053 | | 0.34 | 1.893E-06 |
| Freight Blvd. West from Edwards Ave. 1/5th 10% Outbound | 5 | 2.13 | 0.01053 | | 0.11 | 1.254E-06 |
| Edwards Ave. North from 4th St. 1/5th 10% Outbound | 5 | 2.13 | 0.01053 | | 0.11 | 1.043E-06 |
| 4th St. East to Edwards Ave. 1/5th 10% Outbound | 24 | 11.17 | 0.01053 | | 0.33 | 1.043E-06 |
| Edwards Ave. South from 4th St. 1/5th 10% Outbound | 16 | 20.54 | 0.01053 | | 0.30 | 0.853E-06 |
| 4th St. East to San Bernardino Ave. 1/5th 10% Outbound | 4 | 2.99 | 0.01053 | | 0.11 | 1.266E-06 |
| 4th St. West from 4th St. 1/5th 10% Outbound | 13 | 20.11 | 0.01053 | | 0.17 | 0.502E-06 |

An additional error that has an even greater impact on the analysis is found in modeled emission rates of Table 2.4. In the text of the Air Quality Analysis, the City states that DPM TRU emissions are calculated to be 0.29 grams per hour for on-site idling and off-site travel.⁹ In Table 2-4: DPM Emissions From Project Trucks (Cold Storage), the 4th column in the table provides the Truck Emission Rate in grams per idle-hour. The rate for idling trucks is calculated to be 0.1444 grams/idle-hour. The calculated Daily Truck Emissions (grams per day) in the 5th column is, according to note C of the table, “includes the total truck travel and truck idle emissions. For idle emissions this column includes emissions based on the assumption that each truck idles for 15 minutes.” From this note it is clear that for the Onsite Idling, the daily truck emissions is calculated as the number of trucks multiplied by the truck emission rate (grams/idle-hour) multiplied by the number of hours (15 minutes or ¼ hour per truck).

In Table 2-4, the daily truck emission is calculated to be 2.57 grams per day for Onsite Idle A and B assuming 14 trucks; and 4.78 grams per day for Onsite Idle C and D assuming 26 trucks. The correct values are 0.505 grams per day for Onsite Idle A and B assuming 14 trucks; and 2.202 grams per day for Onsite Idle C and D assuming 26 trucks. The impact of this error is to overestimate the emissions of DPM from idling trucks by a factor of 5 for trucks using Building 2 and overestimating

⁹ Urban. 2021. Bridge Point Rancho Cucamonga Mobile Source Health Risk Assessment, City of Rancho Cucamonga. Dated April 15, 2021. Pg 10.

COMMENT LETTER A

the emissions of DPM from idling truck by a factor of 2 for trucks using Building 1. The City must correct this error in the air quality and health risk analysis and present the results in a revised environmental impact report (REIR).

A-60
(cont)

5. The Phase II Investigation Of The Site Failed To Assess For Historically Important Chemicals Of Concern (COCs) That Were Released From The Former Kaiser Steel Mill.

The Phase II investigation of the site focused solely on chemicals of potential concern (COPCs) associated with known activities or source on site (agricultural COPCs) but failed to assess historic COPCs associated with the largest source of pollution in the area from 1942 through 1983. The original Kaiser Steel Mill, located on approximately 1,200 acres in Fontana, is located less than ½ mile from the project site. The facility was an integrated steel production plant that the Kaiser Steel Corporation owned and operated from approximately 1942 to 1983. Studies of the steel mill found that it emitted large quantities of carcinogenic compounds that will persist in the environment¹⁰ and that the emission controls on the plant were deficient.¹¹ In 1970, a report by KVB¹² sought to identify areas where the highest concentrations of emissions might be expected to occur resulting from the use or manufacture of 11 specific carcinogenic substances in California. The report focused on recognized “hot spots” in which carcinogenic compounds were released and had the potential for dispersion after release. Concern about the emissions from the Kaiser Steel Mill as a major source of polycyclic organic matter (POMs are also known as polycyclic aromatic hydrocarbons), arsenic, cadmium, and benzene in California.¹³ Arsenic, cadmium, and POMs are not subject to degradation in the environment and will represent a COPC for the area. According to the U.S. EPA’s 1976 assessment

A-61

¹⁰ KVB. 1970. An Inventory Of Carcinogenic Substances Released Into The Ambient Air Of California. Final Report – Task II & IV. Prepared for Science Applications, Inc by R.M. Roberts, KVB, Inc. Energy and Environmental Systems. March, 1980.

¹¹ U.S. EPA. 1976. Visible Emission Observation, Kaiser Steel Corporation, Fontana, California, September, 1975. EPA-330/2-76-028.

¹² KVB. 1970. An Inventory Of Carcinogenic Substances Released Into The Ambient Air Of California. Final Report – Task II & IV. Prepared for Science Applications, Inc by R.M. Roberts, KVB, Inc. Energy and Environmental Systems. March, 1980.

¹³ KVB. 1970. An Inventory Of Carcinogenic Substances Released Into The Ambient Air Of California. Final Report – Task II & IV. Prepared for Science Applications, Inc by R.M. Roberts, KVB, Inc. Energy and Environmental Systems. March, 1980.

COMMENT LETTER A

of visible emissions from the Steel Mill,¹⁴ the basic coke, iron and steel processes result in the emission to the atmosphere of excessive levels of particulate air pollutants, despite the installation of various air pollution control devices. Emissions from the plant would have covered the area of the Project Site for many decades and present a recognized environmental concern for the site.

The Phase II investigation of the Project Site performed by Ardent Environmental Group Inc, focused on COPCs associated with the clarifier at the former Truck Maintenance Area and the former agricultural area of the site. The COPCs analyzed for by Ardent included volatile organic compounds (VOCs) using U.S. EPA Method 8260B, petroleum hydrocarbons using U.S. EPA Method 8015 modified, as well as U.S. EPA Methods 8141A for organophosphorus compounds and U.S. EPA Method 8091A for organochlorine compounds. These four methods are not appropriate for measuring the COPCs known to have been released from the Kaiser Steel Mill. The Phase II investigation is therefore inadequate for assessing potential exposure to residual contaminants that may be present on site. The Project's construction phase will disturb soils and may release residual contamination that settled at the Project site. The City must correct this error in the hazardous materials section of the DEIR and present the results in a revised environmental impact report (REIR).


A-61
(cont)

Conclusion

The facts identified and referenced in this comment letter lead me to reasonably conclude that the Project could result in significant impacts if allowed to proceed. The City must prepare a REIR to address these substantial concerns and to address the errors presented in the DEIR.

A-62

Sincerely,


JAMES J. J. CLARK, Ph.D.

¹⁴ U.S. EPA. 1976. Visible Emission Observation, Kaiser Steel Corporation, Fontana, California. September, 1975. EPA-330/2-76-028.

COMMENT LETTER A

EXHIBIT B

COMMENT LETTER A



SMITH ENGINEERING & MANAGEMENT

June 16, 2021

Mr. Aidan Marshall
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080-7037

Subject: Bridge Point Rancho Cucamonga Project (SCH 2020100056)

P21017

Dear Mr. Marshall:

Per your request, I reviewed the Draft Environmental Impact Report (the "DEIR") for the Bridge Point Project (the "Project") in the City of Rancho Cucamonga (the "City"). My review is with respect to transportation and circulation considerations.

My qualifications to perform this review include registration as a Civil and Traffic Engineer in California, over 50 years professional consulting practice in these fields and both preparation and review of the traffic and transportation components of numerous environmental documents prepared under the California Environmental Quality Act ("CEQA"). My professional resume is attached hereto.

The City Has Adopted VMT Thresholds of Significance That Are Unsupported and Inconsistent With the Intent of SB 743 and With OPR Guidance

The City has adopted as project completion year and cumulative (2040) thresholds of significance for vehicle miles traveled ("VMT") impact, the current average VMT per service population citywide of 26.5 miles. However, the intent of SB 743 in requiring VMT as the principal measure of transportation impact was *to reduce VMT and thereby reduce air pollution and greenhouse gas emissions*.

A-63

A-64

TRAFFIC • TRANSPORTATION • MANAGEMENT

5311 Lowry Road, Union City, CA 94587 tel: 510.489.9477 fax: 510.489.9478

COMMENT LETTER A

Mr. Aidan Marshall
Adams Broadwell Joseph & Cardozo
June 16, 2021
Page 2

To accomplish this goal, the Governor's Office of Planning and Research ("OPR"), the agency that oversees implementation of CEQA and CEQA guidelines, in the guidance cited in the DEIR *recommends* a significance threshold set at 85 percent of the average service population VMT in the Lead Agency's jurisdictional area, although leaving discretion to the lead agency¹. The purpose of setting a threshold below 100 percent of average VMT is to ensure that the VMT analysis will result in meaningful significance determinations and mitigation designed to reduce VMT below existing levels. In setting the VMT significance threshold at the City's current average VMT (e.g. 100 percent of existing average VMT), the Project's significant VMT impacts escape disclosure and mitigation, and the City appears to be ignoring the directives of the law.

A-64
(cont)

The DEIR Misinterprets the Results of Low VMT Area Screening

The DEIR's transportation analysts employed the San Bernardo Transportation Analysis Model ("SBTAM") to perform two methods of map-based screening to determine whether the Project is in a low-VMT area and hence be presumed to have no significant VMT impact.² In the first screening SBTAM was used in the origin-destination ("OD") mode. It found that the Project area generated 34.8 VMT per service population, whereas the overall jurisdiction average was only 32 VMT per service population. Hence, the Project area did not qualify as a low VMT area in that screening test.

In the second screening test, SBTAM was used in the production-attraction (P-A) mode. This test found that the Project area had a VMT average per service population of only 22.1 while the jurisdiction average was 26.2, so by that test the Project area did qualify as a low VMT area.

A-65

However, instead of declaring the area screening tests 'inconclusive' because of the conflicting results, the DEIR analysts chose solely to accept the results of the test and did find the Project Area a low VMT area. This is a decision that is unreasonably favorable to the Project and completely inconsistent with CEQA's demand for a good faith effort to disclose impact.

Had the City Adopted VMT Significance Criteria Consistent With OPR Guidance, Detailed Analysis Would Have Found the Project to Have Significant VMT Impact

Seemingly questioning their own decision to claim that the Project met the Low VMT Area which would have exempted the Project from more detailed VMT analysis, the DEIR's transportation analysts conducted a Project-specific VMT

¹ Technical Advisory On Evaluating Transportation Impacts In CEQA, State of California Governor's Office Of Planning And Research, December, 2018, pp 15-17.

² DEIR, Appendix L1, pg. 2.

COMMENT LETTER A

Mr. Aidan Marshall
Adams Broadwell Joseph & Cardozo
June 16, 2021
Page 3

analysis which they claim is for 'informational purposes only'. This analysis indicates that the Project would generate 24.44 VMT per service population in 2020 and 23.76 VMT per service population in the 2040 cumulative scenario. Since the City's adopted threshold of significant VMT impact is its own estimated average of 26.5 VMT per service population, the finding of the Project-specific analysis is that there is no significant VMT impact. However, had the City followed OPR guidance and set its VMT significance threshold 15 percent below the existing average, that threshold would have been 22.53 VMT per service population instead of 26.5 VMT. With the threshold set at that level consistent with OPR guidance, the Project would be found to have significant VMT impact at both the 2020 and 2040 cumulative levels. Consequently, the findings of the DEIR are inconsistent with the legislative intent of SB 743 which established VMT as the metric for review of traffic impacts and the matter must be subject to further review.

A-65
(cont)

The DEIR Transportation Analysis Improperly Discounts from Project Trip Generation the Theoretical Trip Generation of a Previous Use of the Site that Had Been Abandoned Prior To Issuance of the Notice of Preparation

The Notice of Preparation ("NOP") for the subject environmental document was issued in October, 2020. The prior use of the site was abandoned in February, 2020 and the site may have been under-utilized well prior to that date. CEQA Guidelines §15125(a) provide that the ordinary baseline for environmental analysis is the conditions that exist at the time of the NOP. Hence, discounting trips from the prior use of the site from the Project's trip generation is improper.

Furthermore, the baseline traffic counts relied upon in the analysis were taken on March 11, 2020, after the prior use activity had been terminated. Since the prior use traffic is not represented in the traffic counts, it is doubly improper to discount it from the Project's trip generation.

A-66

The improper trip generation discounting could substantially alter conclusions of the analysis. In terms of actual vehicles, the improperly discounted trips amount to 44.7 percent of Project trips in the AM peak hour, 69.3 percent of Project trips in the PM peak hour, and 63.1 percent of total daily Project trips. In terms of passenger car equivalences ("PCEs"), the improper discounting amounts to 48.2 percent of Project trip generation in the AM peak hour, 71.2 percent of Project trips in the PM peak hour and 73.4 percent of total daily Project trips. This impropriety in the analysis must be corrected.

The Bulk of the Project Is Analyzed as a Non-Sort Fulfillment Center. If it Were Utilized as a Sort Fulfillment Center, Much Higher Trip Generation Would Result

A-67

TRAFFIC • TRANSPORTATION • MANAGEMENT

5311 Lowry Road, Union City, CA 94587 tel: 510.489.9477 fax: 510.489.9478

COMMENT LETTER A

Mr. Aidan Marshall
Adams Broadwell Joseph & Cardozo
June 16, 2021
Page 4

There are two types of Fulfillment Center warehouses. Non-Sort facilities handle bulky items that are shipped individually. Sort facilities handle smaller items where various items comprising a customer order are collected together ("sorted") and shipped in a single package. Sorting facilities require much higher employees per unit floor area than non-sort facilities and consequently generate more traffic. The DEIR transportation section analyzes the Project with the bulk of it being a non-sort facility and separately as a sorting facility (the smaller part remains a cold storage warehouse in either case). The gross project trip generation (without being clouded by the discounting issue discussed above) is about 5 times higher in the AM peak for the sorting facility compared to the non-sorting facility, about 7 times higher in the PM peak and about 3 times higher daily.³ Consequently, a sorting facility could have significantly more extensive traffic consequences. Although the DEIR project description asserts the Project sponsor has no intent of operating a sorting facility, since the building type is adaptable to either form of use, a sorting facility is a reasonably foreseeable use of the Project that would be authorized if the Project is approved. Therefore, the DEIR must either analyze the impacts of a sorting facility at the Project site, or the City must include impose conditions on the Project to limit the facility to non-sort operations. This is the only means of ensuring that the Project will be an exclusively non-sort facility, and would allow the condition to be effectively enforced.

A-67
(cont)

Conclusion

Given the above, the DEIR must be revised and recirculated in draft status.

A-68

Sincerely,

Smith Engineering & Management
A California Corporation



Daniel T. Smith Jr., P.E.
President

³ We use round numbers to describe the differences here because there are small differences if one considers actual vehicles or PCEs.

TRAFFIC • TRANSPORTATION • MANAGEMENT

5311 Lowry Road, Union City, CA 94587 tel: 510.489.9477 fax: 510.489.9478

COMMENT LETTER A

EXHIBIT C

COMMENT LETTER A



WILSON IHRIG
ACOUSTICS, NOISE & VIBRATION

CALIFORNIA
WASHINGTON
NEW YORK

WI #21-070

21 June 2021

Aidan P. Marshall
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080

Subject: *Bridge Point Rancho Cucamonga Project*
Draft Environmental Impact Report, SCH No. 2020100056
Public Review Draft, May 2021
Review and Comment on Noise Analysis

Dear Mr. Marshall,

Per your request, I have reviewed the subject matter document and associated supporting documents with respect to the noise analysis. This letter reports my findings.

Construction Noise Analysis Uses Low Reference Levels – Impact Likely Significant and Unavoidable

The *Bridge Point Rancho Cucamonga Project, Draft Environmental Impact Report* ("DEIR") analyzes the noise from construction activities in three distinct parts: (i) "typical" construction activities (demolition, grading, utilities/infrastructure, paving, and building construction), (ii) nighttime concrete pouring, and (iii) on-site concrete crushing. Segregating the nighttime work makes some sense since it is a special and distinct operation that will require additional permitting from the City of Rancho Cucamonga. It is not obvious why the other two categories – typical and concrete crushing – are treated differently since some of those will presumably occur simultaneously.

What is less obvious – and consequential – is that the analysis of typical construction noise levels is based on "reference noise level measurements taken by [the DEIR preparers]" [DEIR at p. 4.11-16] whereas the analysis of concrete crushing is based on "reference construction equipment noise levels from the Federal Highway Administration (FHWA) published in the Roadway Construction Noise Model (RCNM), which includes a national database of construction equipment reference noise emission levels" [Noise Study at p. 68]. This is consequential because the unsubstantiated, self-reported reference levels are markedly lower than the RCNM reference levels which leads to erroneously low noise level predictions and a mischaracterization of the significance of the impact.

A-69

6001 SHELLMOUND STREET, SUITE 400

EMERYVILLE, CA 94608

(510) 658-6719

WWW.WILSONIHRIG.COM

COMMENT LETTER A



Bridge Point Rancho Cucamonga DEIR
Review of Noise Analysis

The DEIR analysis only considers the equivalent construction noise levels (Leq), not the maximum, and, therefore, only reports the self-measured Leq values.¹ The only description of the self-reported reference levels is as follows:

To describe the Project typical construction noise levels, measurements were collected for similar activities at several construction sites. Table 10-1 provides a summary of the construction reference noise level measurements. Since the reference noise levels were collected at varying distances of 30 feet and 50 feet, all construction noise level measurements presented on Table 10-1 have been adjusted for consistency to describe a uniform reference distance of 50 feet. [Noise Study at p. 61]

The RCNM database provides both a maximum noise level (Lmax) and an Acoustical Use Factor (U%) for many types of equipment.² The equivalent level may be calculated from these by the equation:

$$L_{eq} = L_{max} + 10 \log_{10}(U\%)$$

Table I below compares the reference levels used in the DEIR typical construction noise analysis to those from the RCNM:

TABLE I COMPARISON OF REFERENCE NOISE LEVELS FOR TYPICAL CONSTRUCTION

| Equipment | Phase | DEIR | RCNM | | | Δ Leq | Avg Δ Leq |
|----------------|------------|------|------|-----|------|-----------------|---------------------|
| | | Leq | Lmax | U% | Leq | | |
| Dozer | Demolition | 75.3 | 82 | 40% | 78.0 | 2.7 | 3.7 |
| Scraper | Demolition | 75.3 | 84 | 40% | 80.0 | 4.7 | |
| Grader | Grading | 73.5 | 85 | 40% | 81.0 | 7.5 | 7.5 |
| Concrete Mixer | Paving | 71.2 | 79 | 40% | 75.0 | 3.8 | 6.1 |
| Paver | Paving | 65.6 | 77 | 50% | 74.0 | 8.4 | |
| Crane | Building | 62.3 | 81 | 16% | 73.0 | 10.7 | |
| Backhoe | Building | 64.2 | 78 | 40% | 74.0 | 9.8 | |
| Air Compressor | Building | 65.2 | 78 | 40% | 74.0 | 8.8 | |
| Generator | Building | 64.9 | 81 | 50% | 78.0 | 13.1 | 10.6 |

Table II below compares the reference levels used in the DEIR concrete crushing noise analysis to those from the RCNM :

¹ The equivalent sound level (Leq) is the steady sound level that has the same amount of acoustical energy as the actual, time-varying sound level. For all intents and purposes, it may be considered the average noise level.

² The data for the RCNM was primarily collected during the Central Artery Tunnel Project ("Big Dig") in Boston, so the RCNM provides both the specified noise limit and actual measured noise levels. In general, the measured noise levels were lower than the specified limit. In this letter, I am using the RCNM whichever is the lower of the two. Again, this is typically the measured level, not the specified level. A copy of the RCNM Reference Levels and Usage Factors is appended to this letter.

COMMENT LETTER A



Bridge Point Rancho Cucamonga DEIR
Review of Noise Analysis

TABLE II COMPARISON OF REFERENCE NOISE LEVELS FOR CONCRETE CRUSHING

| Equipment | DEIR | RCNM | | | Δ Leq |
|------------------|------|------|-----|------|-------|
| | Leq | Lmax | U% | Leq | |
| Hoe Ram | 83.0 | 90 | 20% | 83.0 | 0.0 |
| Front End Loader | 75.0 | 79 | 40% | 75.0 | 0.0 |
| Dump Truck | 72.0 | 76 | 40% | 72.0 | 0.0 |

There is no rationale, reason, or explanation in the DEIR as to why the lower self-reported level were used for the typical construction noise analysis, whereas the higher RCNM levels were used for the concrete crushing analysis. The DEIR's reliance on lower, self-reported levels for some construction activities, while using higher RCNM levels for others is therefore unsupported and potentially arbitrary. However, by using the lower self-reported reference levels, the DEIR noise analysis appears to conclude incorrectly that mitigated typical construction noise levels will comply with the applicable standard.

The mitigated typical construction noise level compliance results are presented in Table 4.11-8 of the DEIR. [DEIR at p. 4.11-20]. If the average differences in the reference sound levels are applied to these results, the levels exceed the adopted standard in all directions for the Demolition and Grading phases and also to the West for the Paving and Building phases:

TABLE III ADJUSTING FOR LOW REFERENCE LEVELS

| Phase | Demo | Grade | U/I | Pave | Build |
|-------------------------|-------------|-------------|------|-------------|-------------|
| DEIR Values | | | | | |
| North | 66.4 | 64.6 | 62.7 | 62.3 | 58.6 |
| South | 66.9 | 65.1 | 63.2 | 62.8 | 59.1 |
| East | 62.1 | 60.3 | 58.4 | 58.0 | 54.3 |
| West | 68.9 | 67.1 | 65.2 | 64.8 | 61.1 |
| Add in Avg Δ Leq | 3.7 | 7.5 | N/A | 6.1 | 10.6 |
| Adjusted Value | | | | | |
| North (70 dBA) | 70.1 | 72.1 | 62.7 | 68.4 | 69.2 |
| South (70 dBA) | 70.6 | 72.6 | 63.2 | 68.9 | 69.7 |
| East (65 dBA) | 65.8 | 67.8 | 58.4 | 64.1 | 64.9 |
| West (70 dBA) | 72.6 | 74.6 | 65.2 | 70.9 | 71.7 |

Numbers in red bolded typeface exceed DEIR significance standard (shown in parentheses). All values are dBA Leq.

A-69
(cont)

COMMENT LETTER A



Bridge Point Rancho Cucamonga DEIR
Review of Noise Analysis

The Roadway Construction Noise Model was first published in 2006. Since that time, the construction noise reference levels it contains (along with those published by the Federal Transit Administration which are generally higher) have become *de facto* national standards for construction noise analyses. The State of California does not have regulatory limits that serve to make construction equipment less noisy there, and the DEIR offers no explanation as to why the self-reported levels are markedly lower than the RCNM level. Had the DEIR not availed itself of the RCNM levels, one could suppose that the preparers were simply unaware of this standard reference, but that is clearly not the case.

This analysis indicates that the typical construction noise will cause a significant environmental impact even with the proposed mitigation (a 6-foot sound barrier wall). The typical construction noise levels should be re-calculated by the DEIR preparers using the RCNM reference levels, and new mitigation be formulated accordingly. If mitigation is not feasible, the construction noise will need to be identified as a significant and unavoidable impact.

A-69
(cont)

* * * * *

Please contact me if you have any question about this review of the Bridge Point Rancho Cucamonga Project DEIR noise analysis.

Very truly yours,

WILSON IHRIG

A handwritten signature in blue ink that reads "Derek L. Watry".

Derek L. Watry
Principal

References

City of Rancho Cucamonga, *Bridge Point Rancho Cucamonga Project, Draft Environmental Impact Report* ("DEIR"), SCH No. 2020100056, Public Review Draft, May 2021.

FHWA, *FHWA Roadway Construction Noise Model User's Guide*, FHWA-HEP-05-054, January 2006.

Urban Crossroads, *Bridge Point Rancho Cucamonga Noise Impact Analysis* ("Noise Analysis"), April 15, 2021.

2021-06-21 - bridge point - noise - d.watry.docx

COMMENT LETTER A

RCNM User's Guide

Construction Noise Prediction

Table 1. CA/T equipment noise emissions and acoustical usage factors database.

| CA/T Noise Emission Reference Levels and Usage Factors | | | | | |
|---|-----------------|---------------------------|--------------------------------------|---|------------------------------------|
| filename: EQUIPLST.xls revised: 7/26/05 | | | | | |
| Equipment Description | Impact Device ? | Acoustical Use Factor (%) | Spec 721.560 Lmax @ 50ft (dBA, slow) | Actual Measured Lmax @ 50ft (dBA, slow) (samples averaged) | No. of Actual Data Samples (Count) |
| All Other Equipment > 5 HP | No | 50 | 85 | -- N/A -- | 0 |
| Auger Drill Rig | No | 20 | 85 | 84 | 36 |
| Backhoe | No | 40 | 80 | 78 | 372 |
| Bar Bender | No | 20 | 80 | -- N/A -- | 0 |
| Blasting | Yes | -- N/A -- | 94 | -- N/A -- | 0 |
| Boring Jack Power Unit | No | 50 | 80 | 83 | 1 |
| Chain Saw | No | 20 | 85 | 84 | 46 |
| Clam Shovel (dropping) | Yes | 20 | 93 | 87 | 4 |
| Compactor (ground) | No | 20 | 80 | 83 | 57 |
| Compressor (air) | No | 40 | 80 | 78 | 18 |
| Concrete Batch Plant | No | 15 | 83 | -- N/A -- | 0 |
| Concrete Mixer Truck | No | 40 | 85 | 79 | 40 |
| Concrete Pump Truck | No | 20 | 82 | 81 | 30 |
| Concrete Saw | No | 20 | 90 | 90 | 55 |
| Crane | No | 16 | 85 | 81 | 405 |
| Dozer | No | 40 | 85 | 82 | 55 |
| Drill Rig Truck | No | 20 | 84 | 79 | 22 |
| Drum Mixer | No | 50 | 80 | 80 | 1 |
| Dump Truck | No | 40 | 84 | 78 | 31 |
| Excavator | No | 40 | 85 | 81 | 170 |
| Flat Bed Truck | No | 40 | 84 | 74 | 4 |
| Front End Loader | No | 40 | 80 | 79 | 96 |
| Generator | No | 50 | 82 | 81 | 19 |
| Generator (<25KVA, VMS signs) | No | 50 | 70 | 73 | 74 |
| Gradall | No | 40 | 85 | 83 | 70 |
| Grader | No | 40 | 85 | -- N/A -- | 0 |
| Grapple (on backhoe) | No | 40 | 85 | 87 | 1 |
| Horizontal Boring Hydr. Jack | No | 25 | 80 | 82 | 6 |
| Hydra Break Ram | Yes | 10 | 90 | -- N/A -- | 0 |
| Impact Pile Driver | Yes | 20 | 95 | 101 | 11 |
| Jackhammer | Yes | 20 | 85 | 89 | 133 |
| Man Lift | No | 20 | 85 | 75 | 23 |
| Mounted Impact Hammer (hoe ram) | Yes | 20 | 90 | 90 | 212 |
| Pavement Scarifier | No | 20 | 85 | 90 | 2 |
| Paver | No | 50 | 85 | 77 | 9 |
| Pickup Truck | No | 40 | 55 | 75 | 1 |
| Pneumatic Tools | No | 50 | 85 | 85 | 90 |
| Pumps | No | 50 | 77 | 81 | 17 |
| Refrigerator Unit | No | 100 | 82 | 73 | 3 |
| Rivet Buster/chipping gun | Yes | 20 | 85 | 79 | 19 |
| Rock Drill | No | 20 | 85 | 81 | 3 |
| Roller | No | 20 | 85 | 80 | 16 |
| Sand Blasting (Single Nozzle) | No | 20 | 85 | 96 | 9 |
| Scraper | No | 40 | 85 | 84 | 12 |
| Shears (on backhoe) | No | 40 | 85 | 96 | 5 |
| Slurry Plant | No | 100 | 78 | 78 | 1 |
| Slurry Trenching Machine | No | 50 | 82 | 80 | 75 |
| Soil Mix Drill Rig | No | 50 | 80 | -- N/A -- | 0 |
| Tractor | No | 40 | 84 | -- N/A -- | 0 |
| Vacuum Excavator (Vac-truck) | No | 40 | 85 | 85 | 149 |
| Vacuum Street Sweeper | No | 10 | 80 | 82 | 19 |
| Ventilation Fan | No | 100 | 85 | 79 | 13 |
| Vibrating Hopper | No | 50 | 85 | 87 | 1 |
| Vibratory Concrete Mixer | No | 20 | 80 | 80 | 1 |
| Vibratory Pile Driver | No | 20 | 95 | 101 | 44 |
| Warning Horn | No | 5 | 85 | 83 | 12 |
| Welder / Torch | No | 40 | 73 | 74 | 5 |

A-69
(cont)

Responses to Comment Letter A

Adams Broadwell Joseph & Cardozo (on behalf of CARECA)
June 21, 2021

Responses to Main Comment Letter A

- A-1 This comment consists of introductory remarks and identifies that comments on the Draft EIR are being provided by Adams Broadwell Joseph & Cardozo on behalf of the Californians Allied for a Responsible Economy (CARECA), and provides a summary of the Project. This comment does not raise any environmental issues, and no further response is required.
- A-2 This comment identifies that review of the Draft EIR was also provided by technical consultants supporting the commenter and requests that separate responses be provided to the comment letters provided by these technical consultants. Responses to the comments received from the technical consultants have been provided herein, as requested. Attachments to the technical consultant comment letters are included in Attachment A of this Final EIR.
- A-3 This comment raises general concerns about impacts to air quality, greenhouse gas (GHG) emissions, hazardous materials, noise, transportation, energy, land use and planning, and biological resources resulting from the Bridge Point Rancho Cucamonga Project (Project), as well as general concerns about the Project approvals. These concerns are reiterated in later comments and are addressed in greater detail in the responses to those comments below. This comment incorrectly asserts that the Draft EIR does not comply with the California Environmental Quality Act (CEQA) requirements. As presented in the responses to comments below, the Draft EIR adequately analyzes and discloses the potential environmental impacts resulting from the Project, including the impacts areas cited by the commenter: air quality, GHG emissions, hazardous materials, noise, transportation, energy, land use and planning, and biological resources. As such, no revisions to the Draft EIR analysis or conclusions are required, and recirculation of the Draft EIR is not required. In addition, as further explained below, the City has not yet made any findings in connection with the Project or related approvals; thus, the commenter's claims regarding the sufficiency of these findings are premature.
- A-4. The statement of interest is noted. While there is no publicly available information about CARECA, we note from this comment that the "coalition" is comprised of various labor unions, whose primary interest is securing jobs through a project labor agreement. Employment and business concerns raised in this comment do not raise any associated environmental issues and are therefore not within the purview of CEQA; however, this comment will be provided to the City decision makers for their review and consideration of the project as a whole. This comment does not raise any issues concerning the environmental analysis provided in the Draft EIR and thus no further response is required.
- A-5 This comment interprets and provides a summary of CEQA requirements from the Guidelines and case law and introduces general concerns about the Draft EIR's compliance with CEQA and discussion of impacts. These concerns are addressed in the

responses to the more specific comments below. This comment does not raise any specific issues. As presented in the responses to comments below, the Draft EIR adequately discloses the potential environmental impacts resulting from the Project. No revisions to the Draft EIR analysis or conclusions are required, and recirculation of the Draft EIR is not required.

- A-6 This comment incorrectly asserts that the Draft EIR does not include an accurate and complete Project Description and summarizes CEQA requirements and case law related to describing a project. The comment generally criticizes the Draft EIR, is unsupported and does not identify any specific concerns or provide evidence that the Project Description is incomplete. The City agrees with the commenter that a Project Description must be “accurate, stable, and finite,” which is exactly what is provided in the Draft EIR. Responses to Comments A-7 through A-11, below, address specific comments related to the Project Description and demonstrate that the Draft EIR includes an accurate and complete Project Description that adequately meets CEQA requirements.”
- A-7 This comment acknowledges that the City Draft EIR’s estimate of cold storage is based, in part, on the proposed building design and site plan then incorrectly asserts that the Draft EIR fails to substantiate the estimate that 10% of the Project will be used for cold storage. As identified on Page 3-9 of the Draft EIR, different types of high-cube warehouses have various operational characteristics (e.g., fulfillment centers that can be non-sort or sort facilities, cold storage warehouses, hours of operations, etc.). The future tenants of the buildings are not currently known, could not reasonably be known, and were not known when the Draft EIR was prepared. The Project involves developing two Class A speculative industrial buildings designed to meet contemporary industry standards that can accommodate a wide variety of users. Each building has been designed to operate independently. Therefore, for analysis purposes in the Draft EIR, certain assumptions regarding the Project’s physical characteristics, operations, and construction activities are made, and are clearly identified in Draft EIR Section 3.0, Project Description. The proposed building design/site plan and associated parking layout was the basis for anticipating that the proposed buildings would operate as non-sort fulfillment centers, as further discussed under Response to Comment A-8, below. The statement that 90% of the building square footage would be operated as a high-cube non-sort fulfillment center warehouse and the remaining 10% would be operated as a high-cube cold storage warehouse was not based on the building design/site plan. Rather, the Project Applicant is proposing that tenants would occupy a maximum 10% of the Project building square footage with high-cube cold storage uses, and therefore this was the maximum amount of cold storage square footage analyzed. In addition, as part of its Project approvals, in response to this comment and for purposes of clarification, this operational characteristic that has already been disclosed in the Draft EIR, will be enforced by the City through a Condition of Approval that restricts the Project to no more than 10% of the building space being used for high-cube cold storage warehouse space, consistent with the analysis in the Draft EIR. As noted in the Draft EIR and reiterated herein, because the Project will involve no more than 10% use for cold storage as a condition of approval, no revisions to the Draft EIR project description or associated analyses are required. Notwithstanding, for clarification, page 3-9 of the Draft EIR Project Description (1st partial paragraph) is hereby revised to read as follows:

“...However, for purposes of analysis in this Draft EIR, and based on the proposed building design/site plan and associated parking layout, it is assumed that 90% of the building square footage would be operated as a high-cube non-sort fulfillment center warehouse¹ and the remaining 10% would be operated as a high-cube cold storage warehouse². A Condition of Approval will be included for the Project limiting any cold storage to a maximum 10% of building square footage.”

This revision is included in Section 3.0, Draft EIR Clarifications and Revisions, of this Final EIR.

- A-8 This comment addresses the description of the Project as a “high-cube non-sort fulfillment center”. The referenced text on Page 3-38 of the Draft EIR is simply acknowledging that based on the proposed building design/site plan, the Project Applicant anticipates that the proposed buildings would be operated as a high-cube non-sort fulfillment center. As identified on Page 3-9 of the Draft EIR, based on Institute of Transportation Engineers (ITE) Trip Rate 155 for “fulfillment center” a non-sort fulfillment center typically ships large box items that use more automation than manual sortation, and a sort fulfillment center typically ships out smaller items, requiring extensive sorting, typically by manual means. The fact that a sorting facility would also be allowed under the proposed Project entitlements has no bearing on the Project description. As provided by the Guidelines, a conclusion is supported by substantial evidence if there is “enough relevant information and reasonable inferences ... that a fair argument can be made to support a conclusion, even though other conclusions might also be reached.”³ In this case, the Project buildings at this point, due to the proposed design and parking layout, are anticipated to operate as non-sort fulfillment centers, and that was appropriately the basis for analysis in the Draft EIR.

Contrary to the commenter’s assertion, the Draft EIR does not conclude that sorting would not occur at the Project site following construction, instead the City conservatively evaluated two operational scenarios in the Draft EIR: the proposed operations as a non-sort fulfillment center and operations as a sort fulfillment center, where applicable. The supplemental analysis for a sort fulfillment center is related to impacts based on trip generation (e.g., air quality, energy, greenhouse gas emissions, off-site traffic noise, and transportation) because a sort fulfillment center use would be expected to generate an estimated 13,070 actual vehicle trip-ends per day, and a net increase of 10,038 total vehicle trip-ends per day (passenger cars and trucks) when taking into consideration daily trips that would be generated by use of the existing buildings (3,032 actual vehicle trip-ends per day as discussed in Draft EIR Section 4.13, Transportation). For comparison, the high-cube non-sort fulfillment center warehouse and high-cube cold storage building operations would generate 3,472 actual passenger car vehicle trip ends per day, compared to 12,528 actual passenger car vehicle trip ends per day with the high-cube sort

¹ Fulfillment centers can be categorized as either sort or non-sort facilities. A non-sort fulfillment center typically ships large box items that use more automation than manual sortation. A sort fulfillment center typically ships out smaller items, requiring extensive sorting, typically by manual means. (Institute of Transportation Engineers Trip Rate 155).

² A cold storage warehouse has the ability to keep temperature sensitive items in a temperature-controlled environment.

³ Guidelines § 15384(a).

fulfillment center warehouse use. There would be a minimal difference in truck trip ends per day (536 trips ends per day with a non-sort warehouse operation compared to 542 trip ends per day with a sort warehouse operation), and no difference in trip generation for the high-cube cold storage warehouse use. Therefore, the Draft EIR conservatively analyzes the impacts resulting from use of the buildings as non-sort fulfillment centers and sort fulfillment centers, ensuring that the potential environmental impacts resulting from operation of the Project have been adequately analyzed. No further analysis is required. Further, the Project Applicant has agreed as part of the proposed Development Agreement that the proposed buildings would not be operated as sort use fulfillment centers.

- A-9 This comment requests that the types of end-users for the proposed buildings be identified, if known to the City or the Project Applicant. As discussed in Responses to Comment A-7 and A-8, above, the end-users are not currently known and cannot reasonably be known. The identification of any future tenant or end user would be entirely speculative and, as such, is not appropriate or required under CEQA. The proposed buildings are being constructed as speculative industrial buildings designed to meet contemporary industry standards, accommodating a wide variety of users. The estimate made for purposes of analysis that 90% of the building square footage would be operated as a high-cube non-sort fulfillment center warehouse and the remaining 10 percent would be operated as a high-cube cold storage warehouse is explained in Response to Comment A-7, above. As also identified, the City of Rancho Cucamonga will condition the Project with a restriction that no more than 10% of the building space be used for high-cube cold storage warehouse space, consistent with the analysis in the Draft EIR. Commentor cites *Bakersfield Citizens for Local Control v. City of Bakersfield*⁴ for the proposition that an EIR must disclose its tenant or type of business “where the type of tenant, or type of business, is known and there is evidence that an impact unique to that tenant or type of business will result.”⁵ That case involved an EIR where no tenants were identified, despite the fact that it was “clear from the administrative record that prior to certification of the [] EIR, the public and the City knew that one of [the applicants] tenants was going to be a Supercenter.”⁶ As noted repeatedly throughout the Draft EIR and herein, neither the City nor Applicant have any such knowledge regarding the future tenants of the Project. In addition, courts have held that “[i]t is common knowledge that projects are often developed without any knowledge of who the user/tenant will be. If CEQA was to be interpreted [to require that information], no such projects could ever proceed until all potential user/tenants were identified and subsequently investigated by the lead agency. In addition to being completely impractical, this interpretation finds no support in the sphere of law and regulation encompassed by CEQA.”⁷ Courts have also held that identification of a specific tenant, such as a nation-wide retail chain store, in a proposed commercial development did not constitute potentially significant change and did not warrant additional environmental review under CEQA.⁸

⁴ (2004) 124 Cal.App.4th 1184, 1213.

⁵ Comment Letter, p. 7.

⁶ *Bakersfield Citizens for Local Control v. City of Bakersfield*, 124 Cal.App.4th at 1194.

⁷ *Maintain Our Desert Env't v Town of Apple Valley* (2004) 124 CA4th 430

⁸ *Friends of Davis v. City of Davis* (2000) 83 Cal.App.4th 1004, 1021-22.

- A-10 Backup generators would operate very infrequently, if at all, and would be used only for emergency operations. This fact, in conjunction with a number of assumptions that would need to be made to estimate air quality impacts due to emergency operations (e.g., frequency and duration of the emergency, the specific horsepower rating and engine type), renders quantification of those impacts too speculative to be meaningful and is therefore not required by CEQA. “An impact which is ‘speculative or unlikely to occur is not reasonably foreseeable’”⁹ and therefore is not required to be analyzed under CEQA. Additionally, any such backup generators utilized by the Project would be required to obtain a separate air quality permit from the South Coast Air Quality Management District (SCAQMD). Under these circumstances, backup generators would only operate for periodic testing as limited by the ultimate air permit it would be governed by for non-emergency situations. Notably, SCAQMD Rule 1470 identifies that new stationary emergency standby diesel-fueled engines (>50 break horsepower [bhp]) shall not operate more than 50 hours per year for maintenance and testing. As such, even if information were available to calculate daily emissions from periodic testing of the backup generators, these emissions would be negligible and would not change the findings or conclusions of the Draft EIR.
- A-11 This comment addresses the analysis in the Draft EIR related to the use of natural gas. The proposed buildings are not being designed or constructed to accommodate use of natural gas; therefore, the Draft EIR analysis correctly does not consider operational impacts associated with use of natural gas (e.g., air pollutant emissions, energy consumption, etc.). As typical for this type of building, the main warehouse space would have no heating and the office space would be heated from an electric source. The Draft EIR discussion of potential connections to existing natural gas lines in the future was solely to demonstrate that there would not be a need for the installation of offsite infrastructure. Although it is not anticipated to be needed, should use of natural gas be requested by a tenant in the future, building and infrastructure modifications would be required that would require approval by the City. As such, any future use of natural gas would be subject to additional environmental review pursuant to CEQA. This requirement has already been disclosed in the Draft EIR and does not represent a new mitigation measure. In addition, in response to this comment, this requirement will be enforced by the City through a Condition of Approval that restricts the Project such that any future proposed use of natural gas and associated installation of required infrastructure is prohibited and any modifications to this prohibition would be subject to additional review under CEQA. No revisions to the Draft EIR project description or associated analyses are required. However, for clarification, page 3-32 of the Draft EIR Project Description (3rd paragraph under “Dry Utilities”) is hereby revised to read as follows:

“...However, natural gas service to the Project is not required and the Project does not include the installation of natural gas lines. Connections to existing gas lines in 4th Street and 6th Street could be made in the future if a tenant requires natural gas for operations **subject to additional review pursuant to CEQA. This requirement will be included as a Condition of Approval for the Project.**”

⁹ *Anderson First Coalition v. City of Anderson* (2005) 130 Cal.App.4th 1173, 1182 (quoting Guidelines § 15064(d)(3)).

This revision is included in Section 3.0, Draft EIR Clarifications and Revisions, of this Final EIR.

- A-12 This comment addresses the treatment of the expected lifespan of the Project in the Draft EIR. The commenter correctly identifies that the Draft EIR conservatively assumes a 30-year Project lifespan when conducting the greenhouse gas (GHG) emissions analysis. As presented in Draft EIR Section 4.7 (refer to Draft EIR page 4.7-13), for construction phase Project emissions, GHGs are quantified and amortized over the life of the Project. To amortize the emissions over the life of the Project, the SCAQMD recommends calculating the total GHG emissions for the construction activities, dividing it by a 30-year Project life. It should be noted that the typical lifespan of a warehouse building is 50 to 60 years¹⁰, and the amortization of construction-related GHG emissions over 30 years is a conservative assumption because it results in greater GHG emissions per year from construction when added to the total GHG emissions. The estimated construction-related GHG emissions is the only Project analysis where the Project's lifespan is necessary for evaluating Project impacts. Other technical analyses consider daily annual, or cumulative impacts, or are not based on a specific period of time. For instance, operational GHG emissions are based on annual emissions calculations, and construction-related and operational criteria air pollutant emissions are based on daily emissions calculations. In addition, the case cited by the commenter, *Communities for a Better Environment v. City of Richmond (CBE)*¹¹ contains no discussion regarding the lifespan of a project. That case involved upgrades to and replacement of existing equipment at an oil refinery "to improve the Refinery's ability to process a more varied proportional mix of crude oil types than it currently processes, including crude oil with higher sulfur content."¹² The court in *CBE* found the project description in the EIR insufficient because it was "inconsistent and obscure as to whether the Project enables the Refinery to process heavier crude" oil.¹³ The court's holding in *CBE* did not relate to the life span of the project. In addition, there is no similar lack of clarity around the description of the Project here. As such, no further response to this comment is required.
- A-13 This comment is acknowledged. While making several statements about CEQA requirements, this comment does not raise any issues related to the environmental analysis provided in the Draft EIR; thus, no further response is required. Moreover, and as explained in Response to Comments A-14 and A-15 below, the City relied on a proper existing conditions baseline supported by substantial evidence.
- A-14 The first six paragraphs of this comment interpret and summarize various legal cases. As described in detail below, relevant case law actually supports the Draft EIR's baseline.

Section 15125 of the CEQA Guidelines sets forth the requirements for the EIR's description of the physical environmental conditions in the vicinity of the Project.¹⁴

¹⁰ commercialproperty2sell.com.au (July 2018). Available at <https://www.commercialproperty2sell.com.au/blog/2018/07/what-is-the-lifespan-of-a-commercial-building.php>

¹¹ (2010) 184 Cal.App.4th 70, 85-89.

¹² *Id.* at 80.

¹³ *Id.* at 89.

¹⁴ CEQA Guidelines §15125(a).

Subsection (a)(1) of that Section, to which Commenter provides a limited citation, goes on to note that “[w]here existing conditions change or fluctuate over time, and where necessary to provide the most accurate picture practically possible of the project’s impacts, **a lead agency may define existing conditions by referencing historic conditions, or conditions expected when the project becomes operational, or both, that are supported with substantial evidence.**”¹⁵ It further provides that “**a lead agency may also use baselines consisting of both existing conditions and projected future conditions that are supported by reliable projections based on substantial evidence in the record.**”¹⁶ The Final Statement of Reasons for the 2018 Guidelines update explains that “a lead agency may look back to historic conditions to establish a baseline where existing conditions fluctuate, provided that it can document such historic conditions with substantial evidence. (See, *Communities for a Better Environment v. South Coast Air Quality Management District* 48 Cal.4th at pp. 327-328 (‘Environmental conditions may vary from year to year and in some cases, it is necessary to consider conditions over a range of time periods’).”¹⁷

The existing conditions defined in the Draft EIR meet the requirements outlined by the CEQA Guidelines and applicable caselaw because they reflect the existing warehouse and retail buildings on the Project site, occupied by warehouse uses for over 37 years, including during the preparation of the Draft EIR. The existing buildings are intact and can be occupied by a warehouse use at any time without any discretionary approvals from the City.¹⁸ As explained in the Phase I Environmental Site Assessment included in the Draft EIR as Appendix I-1 (“Phase I”), the existing buildings were constructed in approximately 1983 and “[s]ince construction, the site buildings have been used by Big Lots (formerly known as Pic-N-Save) for warehouse, distribution, and retail purposes.”¹⁹

Big Lots occupied the existing buildings at the time the development applications for the Project were submitted in November 2019. Following submittal, the existing buildings were briefly vacant from March 1, 2020, to October 29, 2020, at which time the buildings were then re-occupied by another warehouse user (Geodis). The re-occupation of the existing warehouse building was reasonably foreseeable when the NOP was published on October 2, 2020, as the property owner was in the process of seeking out tenants through standard methods of advertisement. The 8-month vacancy does not represent the 37-year history of the project site; therefore, this brief vacancy would not be considered an accurate or reasonable baseline for the project site. Additionally, this vacancy occurred at the beginning of the COVID pandemic, which further substantiates that the vacant condition does not represent an accurate baseline. This is in contrast to the commenter’s incorrect assumption that the existing buildings “have remained vacant since” Big Lots vacated the Project site. The NOP was published only 27 days before the existing buildings were re-occupied by Geodis. Therefore, the EIR was prepared while the existing buildings were occupied, coupled with their occupied use for approximately 37 years prior, is a reasonable environmental baseline to compare the Project impacts against. Therefore, the baseline that was used to inform the analysis is supported by substantial evidence.

¹⁵ CEQA Guidelines §15125(a)(1).

¹⁶ *Id.*

¹⁷ CEQA Guidelines Update Statement of Reasons; available at: https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/2018_CEQA_Final_Statement_of%20Reasons_111218.pdf

¹⁸ Draft EIR, p. 4-4.

¹⁹ Draft EIR, Appendix I-1, p. 1.

Unlike the Draft EIR prepared for the Project, *Communities for a Better Environment v. South Coast Air Quality Management District* (“*CBE v. SCAQMD*”) involved SCAQMD’s failure to prepare an EIR.²⁰ In that case, ConocoPhillips had applied for a permit to conduct a new industrial process at its petroleum refinery that would result in increased nitrogen oxide (NOx) emissions.²¹ SCAQMD determined that although this increase in NOx emissions “exceeded the District’s established significance threshold,” it was not a significant environmental effect of this project because the increase in NOx emissions was still below the maximum amount allowed for the refinery’s existing permits.²² The court found that this baseline was improper because “in ordinary operation any given boiler ran at the maximum allowed capacity only when one or more of the other boilers was shut down for maintenance” and “operation of the boilers simultaneously at their collective maximum was not the norm.”²³

The Draft EIR did not use “hypothetical conditions allowable” like the Negative Declaration at issue in *CBE v. SCAQMD*.²⁴ The Draft EIR included the normal operation of existing buildings and uses, 23,240 square foot (sf) retail building and a 1,431,000 sf warehouse building, as the baseline conditions for the Project site.²⁵ As noted above, these uses have been consistent in the existing buildings at the Project site since their construction 37 years ago, with the exception of an 8-month period amid a global pandemic, during which the buildings were vacant before they were reoccupied. The commenter provides no evidence to support its claim that the existing buildings were ever “underutilized.” Therefore, the Draft EIR used the “realized physical conditions on the ground” as required by *CBE*.²⁶ The fact that the existing buildings were briefly vacant at the time the NOP was published does not affect the environmental baseline. As noted by the court in *CBE v. SCAQMD*, “the date for establishing baseline cannot be a rigid one. Environmental conditions may vary from year to year and ***in some cases it is necessary to consider conditions over a range of time periods.***”²⁷ Importantly, *CBE v. SCAQMD* notes that “[n]either CEQA nor the CEQA Guidelines mandates a uniform, inflexible rule for determination of the existing conditions baseline. Rather, an agency enjoys the discretion to decide, in the first instance, exactly how the existing physical conditions without the project can most realistically be measured, subject to review, as with all CEQA factual determinations, for support by substantial evidence.”²⁸ In this case, the Project site’s use as retail and warehouse for over 37 years, including during the period that the Draft EIR was prepared, constitutes substantial evidence that those conditions represent an accurate baseline.

Association of Irrigated Residents v. Kern County Board of Supervisors (“*AIR*”), also cited by the commenter, also involved a change to operations at a refinery. In that case, the court upheld the agency’s use of the refinery’s 2007 operations as baseline, despite the

²⁰ *CBE v. SCAQMD* (2010) 48 Cal.4th 310, 318.

²¹ *Id.* at 316.

²² *Id.* at 320.

²³ *Id.* at 322.

²⁴ *Id.* at 322.

²⁵ Draft EIR, p. 4-4.

²⁶ *Id.* at 318, quoting appellate court opinion.

²⁷ *Id.* at 327-28, quoting *Save Our Peninsula Committee v. Monterey County Board of Supervisors* (2001) 87 Cal.App.4th 99, 125, emphasis added.

²⁸ *Id.* at 329.

filing of the NOP in 2013, “because of the refinery’s history of fluctuating operations.”²⁹ The refinery in that case had ceased operations in 2008 and resumed partial operations, but very limited refining operations, in 2011.³⁰ Despite the fact that the refinery had not operated at full capacity in the preceding four years, and had not operated at all for two of those years, the court held that “an operating refinery was properly included in the project’s baseline.”³¹ The court based this conclusion on four factors: (1) that the issuance approved the refinery’s operations in the baseline year of permits or other entitlements that were still in effect; (2) information in the EIR showed that the refinery processed oil until its bankruptcy in 2008 and resumed processing oil, albeit at a limited capacity, following its subsequent purchase; (3) the refinery operations had been subject to prior review under CEQA; and (4) the processing of crude oil at the refinery could begin again without the approval of the project.³²

In the case of the Project, the existing buildings have been fully operational with retail and warehouse uses for nearly all of the 37 years since they were constructed, with the exception of the 8-month vacancy between tenants noted above. This vacancy is much shorter than the 4-year vacancy and limited operations period in *AIR*. In addition, the Project site meets all of the factors outlined by the court in *AIR* in that (1) it has entitlements to operate as a warehouse use and can do so at any time without any discretionary approvals from the City;³³ (2) information in the Draft EIR indicated that it was used as a warehouse and retail site until its vacation by Big Lots in February 2020,³⁴ and, as noted above, was subsequently occupied by Geodis in October 2020; (3) the retail and warehouse uses at the Project site have been subject to prior review under CEQA, as indicated in the Staff Report included in Attachment B to this Final EIR. Most importantly, the warehouse and retail uses at the Project site could begin again – and did begin again on October 29, 2020, without the approval of the Project.³⁵

Similarly, the project in *North County Advocates v. City of Carlsbad* (“*North County Advocates*”), involved the redevelopment of a shopping center, which contained a department store that had been vacant for approximately 6 years.³⁶ The court in that case upheld an EIR’s traffic analysis that treated a department store “as fully occupied, even though it was vacated in 2006 and had been only periodically occupied since.”³⁷ In addition, the court in *North County Advocates* distinguished the application of *CBE v. SCAQMD*, stating that:

“the City’s selection of a traffic baseline that assumed full occupancy of the [department store] space was not merely hypothetical because it was not based solely on [the shopping center’s] entitlement to reoccupy the [department store] building ‘at any time without discretionary action,’ but was also based on the actual

²⁹ (2017) 17 Cal.App.5th 708, 718.

³⁰ *Id.* at 721.

³¹ *Id.* at 728-29.

³² *Id.* at 728-9.

³³ Draft EIR, p. 4-4.

³⁴ Draft EIR, p. 4-4.

³⁵ Draft EIR, p. 4-4.

³⁶ (2015) 241 Cal.App.4th 94, 96-8.

³⁷ *Id.* at 97.

historical operation of the space at full occupancy for more than 30 years up until 2006.”³⁸

The reasoning used by the court to uphold the baseline in *North County Advocates* is exactly analogous to the facts outlined in the Draft EIR with respect to the Project site. Not only is it fully entitled and able to be reoccupied at any time as a retail/warehouse use, but it had also been fully operational as such for more than 37 years until it was vacated in February 2020, after which it was reoccupied by Geodis eight months later, as outlined above.

The commenter’s characterization that the Project is distinguishable from the project at issue in *North County Advocates* because that project “sought to fill a vacant space in an existing mall” is incorrect. The site development plan for the project studied in the Draft EIR in *North County Advocates* “allowed for the immediate removal, renovation, and/or redevelopment of portions of the east end of the existing mall structure and associated outbuildings.” An initial site plan “would have allowed for a net increase of approximately 35,000 square feet of gross leasable area.”³⁹ Even after the scope of the project was reduced, the final project “still included demolition and reconstruction of the [department store].”⁴⁰ The reconstruction and expansion of an existing use is identical to the Project at issue here.

Similarly, the “expansion or replacement of components of an existing facility” to which the commenter refers in connection with *AIR* involved “(1) the expansion of existing rail, transfer and storage facilities; (2) the construction of process unit upgrades and modifications; (3) repurposing existing storage tanks; and (4) the relocation and modernization of an existing liquid propane gas truck rack and upgrades to a sales rack.”⁴¹ In addition, the project in that case would result in the offloading of 150,000 barrels of oil per day and the processing of 70,000 barrels per day, as compared to the baseline that the agency chose, and court approved, of 60,389.⁴²

The commenter’s attempt to distinguish *North County* and *AIR* from the fact here therefore fails. Just like in those cases, the existing buildings have a long history of use. The fact that the NOP was issued during an 8-month temporary lull in occupancy between Big Lots and Geodis does not impact the City’s ability to use an existing conditions baseline that assumes full occupancy of the existing warehouse buildings. Therefore, the Draft EIR uses an appropriate baseline and does not need to be revised or recirculated.

The other cases the commenter cites provide support for, rather than against, the baseline used in the Draft EIR. *San Francisco Baykeeper, Inc. v. State Lands Commission (SF Baykeeper)*, involved the approval of mineral extraction leases.⁴³ In that case, the court upheld a baseline of “the average annual volume of sand mined in the proposed project area per year from 2002 to 2007” which the agency concluded provided “a more accurate

³⁸ *Id.* at 105.

³⁹ *Id.* at 98.

⁴⁰ *Id.*

⁴¹ *AIR*, 17 Cal.App.5th at 721.

⁴² See *AIR* 17 Cal.App.5th at 721, indicating refining capacity of up to 70,000 barrels per day and 727-8, noting that average barrels per day for 2007 was 60,389. We further note that the average number of barrels processed per day in 2012, the year immediately preceding NOP preparation, was 4,751.

⁴³ (2015) 242 Cal.App.4th 202, 210.

measure of mining activity against which to evaluate project impacts.”⁴⁴ The court in that case upheld the baseline, noting both that “[e]nvironmental conditions may vary from year to year” and that “an agency enjoys the discretion to decide, in the first instance, exactly how the existing physical conditions without the project can most realistically be measured.”⁴⁵ As in *SF Baykeeper*, given that the Project site was briefly vacant at the time of the NOP, the City here determined that the most accurate baseline was the historical operation of the Project site.

In *Cherry Valley Pass Acres & Neighbors v. City of Beaumont* (“Cherry Valley”) involved the construction of 560 residential units on a 200-acre agricultural site, in which the EIR used a baseline that relied on a property owner’s right to draw 1,484 acre-feet of water from the Beaumont Basin in lieu of the 50 acre-feet that it actually used.⁴⁶ The court in that case upheld the use of the baseline as it was “quintessentially a discretionary determination of how the ‘existing physical conditions of the project’ could ‘most realistically be measured.’”⁴⁷ In so holding, the court also noted that although the property owner was currently using only 50 acre-feet of water, “its right to use its full 1,484 [acre-foot] entitlement on the project site was wholly unaffected.”⁴⁸ Similarly, in this case, the City retains discretion to determine the most realistic baseline against which to compare the effects of the Project. Additionally, as in *Cherry Valley*, the fact that the Project site was briefly vacant does not affect its entitlements or the [applicant’s] right to lease to a new tenant at any time.

A-15 This comment and its subparts are based on the premise that the Draft EIR’s baseline is inaccurate. As detailed above in Response to Comment A-14 above, the baseline was properly determined by the historical retail and warehouse use of the property since its construction in 1983 and its use as such during the Draft EIR preparation period. As such, the commenter is incorrect, and each analysis and specific impact finding in the Draft EIR is based on accurate baseline conditions.

1. The commenter is correct that the Draft EIR used ITE trip generation information [...] for operation of the warehouse building as a high cube transload short-term storage warehouse use (without cold storage) and operation of the retail building as a free-standing discount store use. As explained in Response to Comment A-33 below, the use of this standard trip rate is conservative because it represents the lowest possible trip rate for a warehouse use for purposes of comparing the baseline condition to those of the Project. As stated in the technical response memo prepared by Urban Crossroads and included in Attachment C of this EIR, it is not uncommon to use the ITE Trip Generation Manual rates when there is limited driveway data available or if an existing use is occupied at less than full capacity, as the use of the ITE rates would provide an average representation of the existing trip generation. This method was expressly upheld by the court in *North County Advocates*, where trip rates “for the vacant Robinson’s-May building were estimated using those identified in the San Diego Association of Government.”⁴⁹ Like in North County, the City’s “decision to base the traffic baseline on historical occupancy rates is further supported by

⁴⁴ *SF Baykeeper*, 242 Cal.App.4th at 212.

⁴⁵ *Id.* at 218 (internal citations omitted).

⁴⁶ (2010) 190 Cal.App.4th 316, 323 and 336.

⁴⁷ *Id.* at 337.

⁴⁸ *Id.* at 338.

⁴⁹ *North County Advocates v. City of Carlsbad* (2015) 241 Cal.App.4th 94, 102

substantial evidence consisting of [ITE] data on such use levels.”⁵⁰ The commenter’s statement that existing trips should be zero based on vacancy on the date of the NOP is therefore directly contrary to case law and is nonsensical. This would mean that trips would also need to be zero if the NOP was released on a day a fully occupied building happened to be empty because the company was at an off-site event. This is not representative of actual existing conditions at the Project site over the past 37 years. The City correctly used conservative ITE trip generation rates to estimate traffic generated by the existing buildings.

2. As explained above, the ITE trip generation rates are a standard, appropriate and conservative method to determine trip generation from the existing buildings. As such, the existing conditions baseline conditions that relied upon the trip generation data, including mobile source air pollution emissions baseline, mobile source GHG emissions baseline transportation energy demands baseline, traffic fuel consumption baseline, and transportation hazards baseline are all correct. We note that the VMT baseline did not rely on trip generation from the existing baseline and the commenter’s reference to this analysis is misinformed.
3. Baseline emissions associated with architectural coatings, consumer products, and landscape maintenance equipment are properly calculated based on operation of the existing buildings. As explained in Response to Comment A-14 above, the Draft EIR use of an existing conditions baseline complies with CEQA and CEQA case law. The fact that the NOP was issued at a brief time when the building was vacant between tenants is immaterial. Therefore, the baseline emissions do not need to be reduced.
4. The commenter is correct that the existing facility’s baseline natural gas, electricity, and water consumption is based on historic conditions when Big Lots occupied the existing buildings. It is expected that if a future tenant occupies the existing buildings, they would have similar utility consumption and therefore this data is appropriate to use as the existing conditions baseline. As explained in Response to Comment A-14 above, the existing utilities baseline is not zero, and the analysis does not need to be revised.
5. The commenter is correct that energy-related emissions baseline reflects historic energy usage, derived from utility bills from previous tenants. It is expected that if a future tenant occupies the existing buildings, they would have similar energy consumption and therefore this data is appropriate to use as the existing conditions baseline. As explained in Response to Comment A-14 above, the existing energy baseline is not zero and the analysis does not need to be revised.
6. The commenter is correct that the existing wastewater generated is based on the fact that warehouse uses have occupied the existing buildings for the past 37 years, were reoccupied 27 days after the NOP was issued, and could be reoccupied again at any time with similar warehouse uses. As explained in Response to Comment A-14, the existing wastewater generation baseline is not zero, and the analysis does not need to be revised.
7. The commenter is correct that the existing water demand is based on the fact that warehouse uses have occupied the existing buildings for the past 37 years, were

⁵⁰ *Id.* at 106.

reoccupied 27 days after the NOP was issued, and could be reoccupied again at any time with similar warehouse uses. As explained in Response to Comment A-14, the existing water demand baseline is not zero, and the analysis does not need to be revised.

8. The commenter is correct that the existing GHG emissions baseline is derived from the site's energy source, mobile source, waste generation, and water usage. This is based on the fact that the existing buildings have been occupied by warehouse uses for the past 37 years, were reoccupied 27 days after the NOP was issued, and could be reoccupied again at any time with similar warehouse uses. As explained in Response to Comment A-14, the correct baseline is not a vacant facility and the existing emissions do not need to be reduced at all.
9. The commenter is correct that the baseline employment opportunities assume the existing buildings are occupied by warehouse and retail uses, as they have been for the majority of the past 37 years. As explained in Response to Comment A-14, the commenter is wrong that the correct baseline is a vacant facility.

- A-16 As identified in Response to Comments A-14 and A-15 above, and further detailed in response to commenter's additional comments below, the baseline accurately reflects the environmental condition of the site.
- A-17 The commenter correctly notes that the trip generation rates for the existing uses were based on rates established by the Institute of Transportation Engineers. As further discussed in Response to Comment A-33 below, the High-Cube Transload and Short-Term Storage Warehouse use was utilized as it closely fit the description of the existing use relative to functionality and size and had the most conservative (lower) daily trip generation rate.

As noted by the commenter, substantial evidence, as defined by CEQA, includes "facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts."⁵¹ The fact that Big Lots, and its predecessor Pic-N-Save, operate retail stores does not preclude the necessity of a warehouse in which to store and distribute the goods they sell. In addition to the common-sense relationship between retail stores and warehouses or distribution centers, the Phase I prepared for the Project site, and included as Appendix I-1 to the Draft EIR, specifically notes that the "site contains a Big Lots retail store ... and a large 1,350,000-square foot warehouse building ... The site is used for warehouse, distribution, and retail purposes by Big Lots."⁵² This factual statement made by an environmental professional based on a review of leasing information and a site inspection of the building (see photos below from Appendix A, Photographic Documentation, of the Phase I ESA included in Appendix I-1 to the Draft EIR), falls within the definition of substantial evidence provided by CEQA. As noted in Response to Comment A-33 below, the existing trip generation was estimated using ITE's High-Cube Transload and Short-Term Storage Warehouse (ITE Land Use Code 154) and Free-Standing Discount Store (ITE Land Use Code 815) land uses in an effort to conduct a conservative analysis. The High-Cube Transload and Short-Term Storage Warehouse use was utilized, as it closely fit the description of the existing use relative to functionality and size and had the most conservative (lower) daily trip generation rate.

⁵¹ CEQA Guidelines § 15384(b).

⁵² Draft EIR, Appendix I-1, p. 8.



Photograph No. 16: Forklift Battery Rack in the southeast portion of the Warehouse Building.



Photograph No. 12: Forklift Maintenance Area in the south-central portion of the Warehouse Building.

- A-18 The use to which commenter cites and surmises “seems to be referring to its ITE-derived baseline” is in fact referring to the Project site’s ITE baseline because the pages to which the commenter cites are in fact the Project’s Air Quality Impact Analysis and Traffic Data Memorandum, which are included in Appendix B1 and Appendix L2 of the Draft EIR, respectively. As noted in Response to Comment A-33 below, the existing trip generation was estimated using ITE’s High-Cube Transload and Short-Term Storage Warehouse (ITE Land Use Code 154) and Free-Standing Discount Store (ITE Land Use Code 815) land uses in an effort to conduct a conservative analysis. The High-Cube Transload and Short-Term Storage Warehouse use was utilized, as it closely fit the description of the existing use relative to functionality and size and had the most conservative (lower) daily trip generation rate. This is the most conservative rate because estimating a lower existing trip generation increases the Project’s net trip generation when subtracting the number of estimated existing trips from the number of estimated trips associated with the proposed use.
- A-19 As explained above, the baseline for ITE trip generation accurately reflects the environmental conditions of the Project site. As explained in Response to Comment A-15 above, the use of trip rates prepared by an expert agency (in this case the ITE) to determine existing trips for a vacant building was expressly upheld by the court in *North*

County Advocates. As stated in the technical response memo prepared by Urban Crossroads and included in Attachment C of this EIR, it is not uncommon to use the ITE Trip Generation Manual rates when there is limited driveway data available or if an existing use is occupied at less than full capacity as the use of the ITE rates would provide an average representation of the existing trip generation.

- A-20 As explained above, as well as in the Draft EIR, while the existing buildings were vacant for a brief 8-month period, they were occupied when the Draft EIR was being prepared. Because the buildings can be reoccupied at any time without any discretionary approvals, the Draft EIR assumed occupation of the buildings for the purposes of analysis.⁵³ Because the existing buildings were vacant at the time of the NOP, albeit reoccupied soon thereafter, the City chose to use the employment generation rate provided in the General Plan rather than speculate on the number of employees that would be generated by a potential future tenant.⁵⁴ The commenter provides no evidence that the assumptions provided in the General Plan are in any way inappropriate for the existing buildings at the Project site.
- A-21 This comment summarizes CEQA requirements for disclosing and mitigating potentially significant impacts resulting from a project. In addition to the requirements and guidance noted by commenter, we note that the City's conclusions in the Draft EIR are reviewed under the highly deferential substantial evidence standard. This standard is applied to "conclusions, findings, and determinations and to challenges to the scope of an EIR's analysis of a topic, the methodology used for studying an impact, and the reliability or accuracy of the data upon which the EIR relied."⁵⁵ This "highly deferential substantial evidence standard of review" is applied because the "agency is the finder of fact" and "has the discretion to resolve factual issues and to make policy decisions."⁵⁶ This comment does not provide substantial evidence that environmental impacts are not adequately mitigated in the Draft EIR and thus no response is required.
- A-22 See Response to Comments A-14 and A-15. As noted above, the baseline condition that was the basis for the air quality analysis presented in the Draft EIR accurately reflects the site's environmental condition. Baseline emissions are properly calculated based on the historical operation of the existing buildings. The Draft EIR's use of an existing conditions baseline complies with CEQA and CEQA caselaw. The fact that the NOP was issued at a brief moment when the building was vacant between tenants is immaterial. Therefore, the baseline emissions credits used in the Draft EIR are accurate and no changes to the analysis of operational impacts (regional and local), analysis of the Project's consistency with the SCAQMD Air Quality Management Plan (AQMP), or any other conclusions cited by commenter are required.

In addition, notwithstanding the Project's less than significant air quality impacts, in response to a generic comment letter from the California Air Resources Board (CARB) (Comment Letter C), the Project Applicant has voluntarily agreed to incorporate the following additional mitigation measures that would further reduce the Project's less than significant air quality impacts. Specifically, mitigation measure (MM) 2-1 included in Draft EIR Section 4.2, Air Quality, has been expanded (as shown in bold underline) to include

⁵³ Draft EIR, p. 4-4 and p. 4.12-4.

⁵⁴ *Id.*

⁵⁵ *Santa Monica Baykeeper v. City of Malibu* (2011) 193 Cal.App.4th 1538, 1546.

⁵⁶ *California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 984-85.

additional construction-related mitigation requirements, and new MM 2-2 includes operational requirements. The expanded and new mitigation requirements are also included in Section 3.0, Draft EIR Clarifications and Revisions, of this Final EIR.

MM 2-1 Prior to grading permit and building permit issuance, the City of Rancho Cucamonga shall verify that the following applicable notes are included on the grading plans and building plans. Project contractors shall be required to ensure compliance with these notes and permit periodic inspection of the construction-site by City of Rancho Cucamonga staff or its designee to confirm compliance. These notes also shall be specified in bid documents issued to prospective construction contractors.

- During construction activity, Project construction contractors shall ensure that off-road diesel construction equipment complies with applicable California Air Resources Board (CARB) emissions standards or equivalent and shall ensure that all construction equipment is tuned and maintained in accordance with the manufacturer's specifications.
- The following off-road construction equipment shall be CARB Tier III certified or better, by construction phase as shown:
 - Demolition/Crushing:
Boom Lift
Concrete/Industrial Saws
Crusher
Skid Steer
 - Utilities/Infrastructure:
Trencher
 - Building Construction:
Forklifts
Generator Sets
Welders
 - Paving:
Pavers
Paving Equipment
Rollers
 - Architectural Coating
Air Compressors
- The following off-road construction equipment shall be CARB Tier IV Final certified or better, by construction phase as shown:
 - Demolition/Crushing:
Breakers
Excavators
Generator Sets
Rubber Tired Dozers

- Grading:
Crawler Tractors
Excavators
Graders
Rubber Tired Dozers
Scrapers
 - Utilities/Infrastructure:
Excavators
Skip Loaders/Backhoes
 - Building Construction
Cranes
Crawler Tractors
Laser Screed
Scissor Loaders/Backhoes
Skip Loaders/Backhoes
- **Idling of heavy construction equipment shall be restricted to two minutes and electrical hook ups shall be provided to support use of zero and near-zero construction equipment and tools whenever feasible.**
 - **Off-road equipment with a power rating below 19 kilowatts (e.g., plate compactors, pressure washers) used during project construction shall be electric powered, provided that it is commercially available, which may be plug-in (electric) or battery powered.**
 - **Heavy-duty trucks used for dirt and material hauling during construction shall meet the United States Environmental Protection Agency/California Air Resource Board truck engine standard for Model Year 2014 or later.**

MM 2-2 The Project Applicant shall include the following operational requirements in the final building design or stipulate the operational requirements for building occupants, as appropriate:

Project Design

- **Make truck dock positions EV-ready by installing conduits at truck dock positions for future accommodation of light-duty and/or heavy-duty electric trucks and charging stations.**

Lease Agreement and Owner-Occupant Requirements

- **Those loading docks used by trucks with transport refrigeration units (TRU) as determined by a cold storage tenant shall be**

equipped with electrical hookups (applicable to cold storage tenant lease agreements only).

- **TRUs entering the Project site shall be plug-in capable (applicable to cold storage tenant lease agreements only).**
- **On-site TRU diesel engine run time shall be no longer than 15 minutes (applicable to cold storage tenant lease agreements only).**
- **Service equipment (e.g., yard hostlers, yard equipment, forklifts, and pallet jacks) shall be powered by alternative fuels, electrical batteries or other alternative/non-diesel fuels (e.g., propane) that do not emit diesel particulate matter, and that are low or zero emission.**
- **Trucks and support equipment shall not idle longer than five minutes while on site.**

A-23 Urban Crossroads, the technical consultant responsible for conducting the air quality analysis and HRA for the Project included in the Draft EIR, has reviewed this comment and determined that the commenter incorrectly asserts that the Draft EIR and underlying health risk assessment is flawed because emissions from “building downwash” have not been considered. The appropriate modeling parameter for trucks idling and traveling associated with the Project would be to use multiple volume sources, which was done in the Draft EIR and underlying technical study. The building downwash effect referenced by the commenter does not apply to truck travel, because emissions from trucks are modeled as volume sources (i.e., it is more appropriate to model truck travel using multiple volume sources that make up a line source), are not point sources (i.e., typically used for stationary sources), and the Project’s source of emissions is truck travel and idling. The commenter should be aware that building downwash effect does not apply to the volume source algorithm per US EPA and SCAQMD guidance and therefore is not applicable to the analysis associated with Project truck traffic. Specifically, SCAQMD’s Risk Assessment Procedures Version 8.1 Appendix X (page X-3) states:

“The building downwash algorithms only affect point sources and do not affect volume or area sources.”⁵⁷

In fact, the commenter cites to Dr. Clark’s comments (included in Exhibit A attached to Comment Letter A) that explain that building downwash occurs “...from nearby stacks.” In the case of the Draft EIR and underlying technical analysis, there are no nearby stacks, and the building downwash algorithm is not applicable since it would be inappropriate to model the trucks from the Project using stacks.

Notwithstanding, the commenter provides no evidence or model outputs other than a statement that “Dr. Clark reran the AERMOD model to account for” the building downwash

⁵⁷ *South Coast Air Quality Management District Risk Assessment Procedures for Rules 1401, 1401.1 and 212, Version 8.1* dated September 1, 2017. Available at: <http://www.aqmd.gov/docs/default-source/permitting/rule-1401-risk-assessment/riskassessproc-v8-1.pdf?sfvrsn=12>

effect – which is incorrect (since building downwash cannot be applied to volume sources like trucks) unless other inappropriate changes to the source configuration were made. The commenter provides no source to the modeled input or output files referenced by the commenter. In addition, the case cited by commentor, *Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners*,⁵⁸ involved a failure to conduct any analysis of toxic air contaminants, despite comments from the expert air district suggesting such an analysis.⁵⁹ As explained above, no such omission occurred in the Draft EIR. Therefore, no changes to air quality analysis or health risk assessment conducted for the Project or changes to the Draft EIR are required. Further, we note that Lead Agencies retain the discretion to decide between expert opinions in Findings of Fact. The existence of differing opinions arising from the same pool of information is not a basis for finding the EIR to be inadequate.⁶⁰ When approving an EIR, an agency need not correctly resolve a dispute among experts about the accuracy of the EIR's environmental forecasts.⁶¹

- A-24 The Draft EIR Project Description incorrectly identifies the construction assumption used for purposes of analysis. The following revision is hereby made to the Draft EIR (page 3-38, 1st sentence, 2nd paragraph) consistent with the construction-related air quality analysis, which analyzed construction 5 days a week. This revision is also included in Section 3.0, Draft EIR Clarifications and Revisions, of this Final EIR.

For purposes of analysis in this Draft EIR, construction equipment is expected to operate on the Project site approximately eight hours per day, ~~six~~ **five** days per week ~~(Monday through Saturday)~~.

Because the analysis itself was correctly based on an assumption of construction equipment operating on the Project site five days per week, the results of the analysis remain accurate. Therefore, no changes to the analysis are required and the Draft EIR need not be recirculated.

- A-25 Urban Crossroads reviewed this comment and notes that the commenter incorrectly states that only 80 TRUs were accounted for in the Health Risk Assessment (HRA) modeling. As shown on page 149 of Appendix B2 of the Draft EIR, a total of 81 TRUs were in fact accounted for in the HRA modeling. The commenter's reference to the summary Table 2-4 is flawed because the actual calculation in excel identifies 81 TRUs; however, 35% are attributable to Building 2 and 65% are attributable to Building 1. When these percentages are applied, and the resulting value is presented as a rounded number, the totals appear to show 80 total TRUs. However, if the values are expanded to show two decimal places, it is clear that 81 TRUs have been accounted for, as presented in the excerpt below. Therefore, no changes to the HRA or the analyses in the Draft EIR are required.

| | Trucks Per Day | VMT ^a (miles/day) | Truck Emission Rate ^b (grams/mile) | Truck Emission Rate ^b (grams/idle-hour) | Daily Truck Emissions ^c (grams/day) | Modeled Emission Rates ^d (g/second) |
|---|----------------|---------------------------------|--|---|---|---|
| Onsite Idle A (Building 2 northern loading docks) | 14.18 | | | 0.1444 | 2.57 | 2.977E-05 |
| Onsite Idle B (Building 2 southern loading docks) | 14.18 | | | 0.1444 | 2.57 | 2.977E-05 |
| Onsite Idle C (Building 1 eastern loading docks) | 26.33 | | | 0.1444 | 4.78 | 5.528E-05 |
| Onsite Idle D (Building 1 western loading docks) | 26.33 | | | 0.1444 | 4.78 | 5.528E-05 |

⁵⁸ (2001) 91 Cal.App.4th 1344.

⁵⁹ *Id.* at 1371.

⁶⁰ *Greenbaum v. City of Los Angeles* (1984) 153 Cal.App.3d 391, 413; see also *Eureka Citizens for Responsible Government v. City of Eureka* (2007) 147 Cal.App.4th 357, 371.

⁶¹ *Id.*

- A-26 See Response to Comments A-14 and A-15. As described above, the baseline condition that was the basis for the GHG emissions analysis presented in the Draft EIR accurately reflects the site's environmental condition. Baseline emissions are properly calculated based on operation of the existing buildings. The Draft EIR's use of an existing conditions baseline complies with CEQA and CEQA caselaw. The fact that the NOP was issued at a brief moment in time when the building was vacant between tenants is immaterial. Therefore, the baseline emissions do not need to be reduced and no changes to the analysis of GHG emissions are required. The Project's impacts remain less than significant. Notwithstanding the Project's less than significant GHG emissions impacts, in response to a generic comment letter from CARB, the Project Applicant has voluntarily agreed to incorporate additional mitigation measures that would further reduce the Project's less than significant GHG emissions impacts during construction and operation (refer to modified MM 2-1 and new MM 2-2 presented in Response to Comment A-22 above).
- A-27 Ardent Environmental Group, Inc. (Ardent), prepared the Phase I Environmental Site Assessment (ESA) and Results of a Subsurface Investigation for the Project site (October 8, 2019). These documents are included in Appendix I1 and I2 of the Draft EIR, and summarized in Section 4.8, Hazards and Hazardous Materials. Ardent Environmental Group, and specifically Mr. Paul A. Roberts, P.G., Principal Geologist, has provided technical input for this response and Response to Comment A-28, which are based on the comment letter from Clark & Associates (Exhibit A of Comment Letter A). Ardent's responses are provided in their entirety in Attachment C of this Final EIR.

Contrary to the commenter's assertion, the Phase II is not impermissibly narrow. Prevailing winds in Rancho Cucamonga are reported from the south to southwest.⁶² This is consistent with information presented on page 14 of the 1973 EPA report showing wind blowing from the southwest to the northeast. Wind direction is reported in degrees and describes the direction from which the wind is blowing. Southwest is at 225 degrees). The former Kaiser Steel plant was located east-northeast of the Project site and would be considered downwind from the site, making it almost impossible for contaminants from this former plant to be aerially deposited on the Project site.

Mr. Roberts prepared the Phase I ESA in accordance with ASTM E 1527-13 and concluded that the only Recognized Environmental Condition (REC) that presented a material harm to the public health or the environment was the clarifier located east of a former truck maintenance area. Sections 5.2 and 5.7 of the Phase I ESA recognize that "From the early 1950s, properties further north and east of the site were used as an electrical generating plant (Etiwanda Generating Station) and steel manufacturing (Kaiser Steel)." The former Kaiser Steel plant is not identified as a REC in the Phase I based on the distance of the former Kaiser Steel Plant from the site, prevailing wind direction, extensive studies completed at the Kaiser Steel property since 1976, and the results a 2019 independent Phase I ESA completed for the Project site.

Phase II testing was performed by Ardent to assess whether elevated concentrations of selected chemicals were present in the vicinity of the clarifier and assess whether elevated

⁶² Meteoblue, Climate Rancho Cucamonga (accessed July 9, 2021). See windrose available at: https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/rancho-cucamonga_united-states-of-america_5385955

concentrations of agricultural chemicals were present in the northern portion of the site. Consistent with ASTM E 1527-13, the Phase II investigation was performed based on the results of the Phase I ESA. Because the Phase I properly did not identify the former Kaiser Steel plant as a REC, the Phase II investigation was targeted to analyze soil for Volatile Organic Compounds (VOCs) and pesticides. The results of the Phase II indicated no detectable concentrations of petroleum hydrocarbons and VOCs and low levels of pesticides. Because arsenic was formerly used in pesticides, the Phase II investigation sampled and analyzed shallow soils for arsenic. All results were less than 1 mg/kg, which is well below the background level of 12 mg/kg of arsenic in soil.

Mr. Clark relies on a 1975 “Visible Emission Observations” report prepared by the Environmental Protection Agency (EPA) and its attached generic “Inventory of Carcinogenic Substances Released into the Ambient Air of California” to determine compliance with air quality regulations and orders. There is nothing in this report that indicates or concludes that aerially deposited contaminants exist at the Project site. Mr. Roberts reviewed the information provided by the commenter, and noted that since completion of this 45-year-old study, numerous investigations have been completed throughout the former Kaiser Steel property and in the surrounding vicinity under the direction and oversight of the California Department of Toxic Substances Control (DTSC). Most of the properties in and around the former Kaiser Steel plant have been successfully redeveloped. Based on the results of these investigations, four operable units have been identified, all within the boundary of the former Kaiser Steel property. Site-wide groundwater contamination is considered a fifth operable unit. There have been no indications that any of these operable units are associated with aerially deposited contaminants on surrounding soils. Moreover, the absence of arsenic in the shallow soils at the property supports our conclusion that the Project site was not impacted by aerially deposited contaminants from the Kaiser Steel Plant.

Mr. Roberts concluded that aerially deposited chemicals from the Kaiser Steel Plant are not present at the Project site at levels that would impact redevelopment of the site. This is based on the distance of the former Kaiser Steel Plant from the site, prevailing wind direction, extensive studies completed at the Kaiser Steel property since 1976, the results of two independent Phase I ESAs completed for the site, and lack of arsenic (one of Kaiser Steel’s reported COPCs) detected during subsurface investigations completed at the site.

Therefore, the Phase I ESA and subsequent Phase II investigation completed by Ardent are adequate to address the environmental concerns at the site.

- A-28 The City is not required to conduct a health risk assessment associated with disturbance of contaminated soil. As explained above in Response to Comment A-26, the Phase II investigation was properly targeted to investigate potential contaminants of concern at the Project site, and it determined that aerially deposited chemicals from the Kaiser Steel Plant are not present at the Project site at levels that would impact redevelopment of the site.

Consistent with *California Building Industry Assn. v. Bay Area Air Quality Management Dist.* (2015) 62 Cal.4th 369, 389, the EIR here *did* analyze whether potential soil contamination at the site could be exacerbated by redevelopment of the site.⁶³ The claim that additional investigation is required because “Dr. Clark’s comments provide substantial evidence that carcinogenic compounds ***might be*** found on the Project site” is contrary to

⁶³ Draft EIR 4.8-20-23.

the law. Evidence of a fair argument that a project may have a significant effect on the environment is relevant in determining whether or not the preparation of an EIR is required.⁶⁴ This standard has no bearing on the analysis contained within the EIR once prepared. The EIR analyzed the potential for carcinogenic compounds to be present at the site and concluded, based on extensive review in the Phase I and Phase II investigation that the impact was less than significant. Mr. Clark's speculation that there "might be" additional contaminants at the site is not substantial evidence of an impact, or of a need for additional investigation. The information provided by Mr. Clark does not indicate the presence, or even possible presence, of carcinogenic compounds at the site that could be disturbed during redevelopment.

- A-29 Urban Crossroads prepared the *Bridge Point Rancho Cucamonga Noise Impact Analysis* (Noise Impact Analysis) included in Appendix K1 of the Draft EIR, and summarized in Section 4.11, Noise, and has provided technical input for this response and Responses to Comments A-30 and A-31 below, which are based on the comment letter from Wilson Ihrig (Exhibit C of Comment Letter A). Urban Crossroads' responses are provided in their entirety in Attachment C of this Final EIR.

Urban Crossroads' experience demonstrates that the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) significantly overstates the predicted construction noise levels for typical construction noise source activities. Although the model was first published in 2006, the typical noise levels in the RCNM are based on the heavy construction equipment data collected from the Central Artery/Tunnel (CA/T) project in Boston, Massachusetts in the early 1990's. While the RCNM may be the de facto national standard for major infrastructure and/or highway construction projects, they do not accurately represent the noise source activities associated with the planned construction of Bridge Point industrial warehouse uses. The reference noise levels used in the RCNM are now over 30 years old. Over this time, equipment manufacturers have gone to great lengths to make their equipment quieter and new equipment is generally much quieter than old equipment. In addition, the CA/T reference construction noise levels were collected to describe the 24-hour construction of the 7.5 linear mile project with hundreds of pieces of equipment operating at any time. This includes a combination of equipment types such as cranes, slurry trenching machines, hydromills, hoe rams, pile drivers, jackhammers, dump trucks, concrete pumps and trucks, backhoes, loaders, excavators, vacuum trucks, concrete and chain saws, and gas and pneumatically powered hand tools. The 12-year long CA/T project involved major excavation, and concrete placement with thousands of residential and commercial receivers in some cases as close as 10 feet away.

Public concerns about construction noise and vibration increase considerably with lengthy periods of heavy construction on major projects as well as prevalence of nighttime construction (often scheduled to avoid disrupting workday road and rail traffic). Noise and vibration complaints typically arise from interference with people's activities, especially when the adjacent community does not have information about the extent or duration of the construction.

Construction activities for the proposed warehouses represent the short-term daytime construction of warehouse projects within an existing industrial area on a flat site with no major excavation or nearby residential communities. In addition, due to substantial

⁶⁴ *Quail Botanical Gardens Foundation, Inc. v. City of Encinitas* (1994) 29 Cal.App.4th 1597, 1602.

changes in the air quality emission requirements required by CARB, the RCNM reference noise level measurements do not adequately describe modern construction equipment noise levels. Starting 2014, CARB adopted regulations aimed at cleaning up off-road construction equipment. These requirements impose limits on idling, require all vehicles to be reported to CARB, and restrict the use of older vehicles. This regulatory oversight ensures that only newer and quieter construction equipment is operating in compliance with manufactured specifications.

In addition, the RCNM methodology places all construction equipment at a single point near the property line. This scenario simply does not happen in the real world as typical construction activity represents a variety of equipment operating at different locations throughout the project site. Therefore, to estimate the Project's typical construction-related noise levels, sample reference noise level measurements of similar modern construction activities were collected by Urban Crossroads, Inc. to describe the different stages of construction. A total of 16 different construction reference noise level measurements were collected by Urban Crossroads, Inc. at four separate construction sites. This included several noise level measurements of modern industrial/warehousing construction grading and concrete pouring equipment.

The reference noise levels are intended to represent typical construction noise levels when multiple pieces of equipment are operating simultaneously at the construction site. In addition, the construction noise analysis does not rely on any one reference noise level to fully describe the potential impacts. Rather, a combination of individual construction noise level measurements is used to describe typical activities for each stage of construction.

Consistent with City of Rancho Cucamonga Development Code Section 17.66.050[D][4], the construction noise analysis was developed to satisfy an exterior noise level standard of 65 and 70 dBA L_{eq} . Since the City of Rancho Cucamonga does not identify any maximum construction noise level criteria, the noise analysis does not consider the L_{max} construction noise levels. Local noise ordinances that specify limits in terms of maximum noise levels are generally not practical for assessing the noise impacts of a construction project.

The construction activities will occur throughout the day at varying degrees of intensity and at different locations on the Project site. Therefore, the use of the identified reference noise levels for the Project's construction analysis is appropriate and no changes to the analysis presented in the Draft EIR is required.

- A-30 Urban Crossroads does not have an independent noise reference noise level measurement of the concrete crushing activity; therefore, the Noise Impact Analysis relied on the published RCNM reference noise levels to describe the concrete crushing activity, which is an accepted industry practice. It is expected that using modern construction equipment, the actual noise concrete crushing activity will be lower than what is considered in the Draft EIR. Further, the City does not espouse the use of RCNM, since there is no mention of the RCNM in the General Plan Public Health and Safety Element, the General Plan EIR, or the Development Code. Therefore, the construction noise source levels representing a combination of reference noise levels collected by Urban Crossroads and the concrete crushing noise levels found in the RCNM were fully considered and disclosed in the Noise Impact Analysis as summarized in the Draft EIR. The comments provide no evidence that additional temporary construction noise mitigation is required.

The construction noise analysis is consistent with the City Development Code Section 17.66.050[D][4][a], and adjacent receivers were conservatively placed at the property line. The receivers adjacent to the north, south, west all represent non-noise sensitive industrial land uses. Only the West Valley Detention Center is conservatively considered as sensitive receptors for the purposes of this analysis. Although the West Valley Detention Center is a temporary holding facility, there are beds at this facility for temporary stays. However, it is highly unlikely that receivers (inmates, staff, etc.) will be occupying the areas abutting the property lines. The nearest façade of the buildings containing temporary stay facilities are located 364 feet east of the Project site boundary.

The Draft EIR fully discloses the typical construction noise levels by identifying a potentially significant unmitigated noise impacts due to project construction activities at the eastern property line. To reduce the construction noise levels at the property line of the West Valley Detention Center the Draft EIR requires a 6-foot-high temporary noise barrier for the Detention Center and provides short-term construction noise mitigation at the property line for potentially sensitive receivers at the West Valley Detention Center. The Draft EIR adequately addresses potentially significant construction-related noise impacts and identifies feasible mitigation to reduce the impact to a less than significant impact. No additional mitigation is required, and no changes to the analysis presented in the Draft EIR is required.

- A-31 As identified in Responses to Comments A-29 and A-30, above, the City does not rely on the use of RCNM construction noise levels to fully disclose the potential noise level impacts, and the use of reference noise levels identified by Urban Crossroads in the Noise Impact Analysis included in the Draft EIR is appropriate. Further, as identified in Response to Comment A-23 above, Lead Agencies retain the ability to decide between expert opinions and the existence of differing opinions arising from the same pool of information is not a basis for finding the EIR to be inadequate. In addition, this comment fails to recognize that the proposed Project is located within an industrial area with no nearby noise sensitive residential land uses. The individuals temporarily held at the West Valley Detention Center located 364 feet east of the Project site boundary are conservatively considered the nearest sensitive receiver. However, consistent Development Code Section 17.66.050[D][4][a], the construction noise analysis places the adjacent receivers at the property line. This conservatively overstates the Project construction noise levels because the noise experienced by individuals temporarily held at the West Valley Detention Center are estimated at 59.8 dBA L_{eq} with the planned 6-foot-high temporary construction noise barrier and would be approximately 2.3 dBA L_{eq} lower than what is disclosed in the Draft EIR. The Draft EIR adequately addresses potentially significant construction-related noise impacts and identifies feasible mitigation to reduce the impact to a less than significant impact. No additional mitigation is required, and no changes to the analysis presented in the Draft EIR is required.
- A-32 Urban Crossroads prepared the *Bridge Point Rancho Cucamonga Vehicle Miles Traveled (VMT) Analysis* dated March 23, 2021, and *Bridge Point Rancho Cucamonga High-Cube Fulfillment Center Traffic Memo* (Traffic Memo), dated April 15, 2021. These documents are included in Appendix L1 and Appendix L2 of the Draft EIR, respectively, and are summarized in Section 4.13, *Transportation*, of the Draft EIR. Urban Crossroads has provided technical input for this response and Response to Comment A-33, which are based on the comment letter from Smith Engineering & Management (Exhibit B of

Comment Letter A). Urban Crossroads' responses are provided in their entirety in Attachment C of this Final EIR.

The City Guidelines state that a low VMT area is defined as an individual traffic analysis zone (TAZ) where total daily Origin/Destination (O/D) VMT per service population is lower than the City average total daily O/D VMT per service population. (City Guidelines pg. 19-20) This test was performed, and it was disclosed in the analysis that the project did not meet this test. However, City Guidelines also state elsewhere that "it may be appropriate to extract the project generated VMT using the production-attraction (P/A) trip matrix instead of the O/D trip matrix... when a project is entirely composed of retail or employment type uses and there is a need to isolate commute VMT." (City Guidelines page 23). The Guidelines also state "The City should evaluate the appropriate methodology based on the project land use types and context." (City Guidelines page 23). In this case, VMT for this project is entirely composed of retail and employment uses and the City appropriately evaluated the VMT per service population based on the P/A trip matrix as well, which resulted in the project residing in a low VMT area. As stated in the OPR Technical Advisory, "...projects that locate in areas with low VMT, and that incorporate similar features (i.e., density, mix of uses, transit accessibility), will tend to exhibit similarly low VMT" (OPR Technical Advisory pg. 12). The Project here is consistent with the underlying land use and does not propose to change other factors that would prohibit the use of map-based screening. This methodology is appropriate for the Project land use type (industrial warehouse) based on the adopted VMT analysis guidelines and impact thresholds.

The City Guidelines also state that "for low VMT screening to be satisfied, the analyst must verify that the project land uses would not alter the existing built environment in such a way as to increase the rate or length of vehicle trips (e.g., the proposed project is consistent with existing land use in the area, the project would be expected to contribute VMT consistent with existing land use in the area, and the project would not significantly alter travel patterns in the area)." Consistent with the Guidelines and for disclosure purposes, a full VMT analysis was also conducted for the project based on the City's adopted guidance to use the P/A trip matrix for single land use projects. The analysis findings support and verify the screening conclusion that P/A based project generated VMT per service population would not exceed the City's impact threshold or significantly alter travel patterns in the area. As explained in the VMT analysis, the project generated VMT per service population is 7.77% below the City's current threshold, and the cumulative Project-generated VMT per service population 10.34% below the City's threshold. Therefore, the Project's VMT impact would also be considered less than significant based on the comparison of baseline project generated VMT per service population to the City's adopted threshold and the comparison of cumulative project generated VMT per service population to the City's adopted threshold. No changes to the VMT analysis or the conclusions in the Draft EIR are required.

- A-33 See Response to Comments A-14 and A-15. No evidence is given as to why the reviewer disputes the commonly used method of taking credit for the existing baseline. As explained above, the existing conditions here reflect the existing warehouse and retail buildings on the Project site that have been occupied by warehouse and retail uses for over 37 years

and were occupied during preparation of the Draft EIR. First, the existing buildings are intact and can be occupied by a warehouse and associated use at any time without any new entitlements or approvals from the City. As explained in Response to Comments A-14 and A-15, the existing buildings were occupied by warehouse and retail uses (Pic 'n Save and Big Lots) from approximately 1983 to February 29, 2020. The existing buildings were briefly vacant from March 1, 2020, to October 29, 2020, at which time they were re-occupied by another warehouse user (Geodis). The NOP was published on October 2, 2020, only 27 days before the existing buildings were re-occupied by a warehouse user. The brief eight-month vacancy was a temporary condition that occurred during the COVID-19 pandemic, which does not reflect the project site's normal baseline. The commenter provides no substantial evidence to support its claim that operations on the Project site had ever "completely ceased" or that the facility had been "completely vacated," as the buildings were re-occupied by a warehouse user. The EIR was therefore prepared while the existing buildings were occupied, and their occupied use is a reasonable environmental baseline against which to compare Project impacts.

Urban Crossroads employed a commonly used tool for estimating baseline vehicle trip generation utilizing a regionally and nationally recognized data source: ITE Trip Generation Manual, 10th Edition (2017). It is not uncommon to use the ITE Trip Generation Manual rates when there is limited driveway data available as the use of the ITE rates would provide an average representation of the existing trip generation. CEQA allows for the impacts of a project to be assessed based on the incremental effects of the project taking into consideration the existing/baseline conditions. See Response to Comment A-14 and A-15. As the project site contains multiple structures that by right could be occupied and operated by both a retail and warehouse use, the decision to account for these uses as part of the baseline condition is supported by CEQA caselaw. See Response to Comment A-14 and A-15. In an effort to conduct a conservative analysis, the existing trip generation was estimated using ITE's High-Cube Transload and Short-Term Storage Warehouse (ITE Land Use Code 154) and Free-Standing Discount Store (ITE Land Use Code 815) land uses.

ITE Land Use Code 154 is the lowest generating land use of the various industrial-related land uses in the ITE Trip Generation Manual and ITE Land Use Code 815 is the best-fit land use when taking into consideration of the retail tenant that previously occupied the space. The daily rate for ITE Land Use Code 154 is 1.4 trips per thousand square feet as compared to the daily rate utilized for the proposed Project (1.81 trips per thousand square feet for ITE Land Use Code 155 and 2.12 trips per thousand square feet for ITE Land Use Code 157). The resulting trip generation for the existing use is intentionally understated in order to ensure the delta between the proposed Project and existing use is conservatively higher for evaluation in the applicable technical studies. It should be noted that another by-right warehouse user could occupy the space and generate more traffic than that credited for the Project. In other words, the delta in trips between the proposed Project and the existing baseline conditions is more than appropriate.

ITE describes High-Cube Transload and Short-Term Storage Warehouse uses to include "at least 200,000 gross square feet of floor area (with an average of 798,000 square feet), has a ceiling height of 24-feet or more, and is used primarily for the storage and/or

consolidation of manufacturing goods (and to a lesser extent, raw materials) prior to their distribution to retail locations or other warehouses.” These types of warehouses have a high level of automation and logistics management which allow for highly efficient processing of goods. In comparison, the ITE Land Use Code 150 for Warehousing generically indicates that these facilities are “primarily devoted to the storage of materials.” The average surveyed building size in the ITE Trip Generation Manual is 285,000 square feet for the Warehousing land use and has a daily rate of 1.74 trips per day. The High-Cube Transload and Short-Term Storage Warehouse use was utilized as it closely fit the description of the existing use relative to functionality and size and had the most conservative (lower) daily trip generation rate.

The commenter is correct that the existing traffic counts were taken when the existing buildings were vacant. However, the existing trip count data at potentially impacted intersections is only used in the analysis of congestion-based traffic impacts (i.e., LOS), which are no longer considered an impact under CEQA. To provide a conservative analysis, in the non-CEQA portion of the traffic analysis, no credit was taken for the existing trips. Existing trip counts at intersections are not used in analysis of air or GHG impacts, only the total daily trips generated by the use occupying the building. As noted above in Response to Comment A-14, courts have explicitly upheld the use of general trip rates based on the historical occupancy or use of a site.⁶⁵

As explained in Response to Comments A-14 and A-15, the trip generation data is not improper, and the discounting of trips as result of existing uses is entirely appropriate and allowed under the CEQA Guidelines and CEQA caselaw.

- A-34 See Response to Comments A-14 and A-15. As described above, the baseline condition that was the basis for the energy analysis presented in the Draft EIR accurately reflects the environmental condition of the site. Baseline energy consumption is properly calculated based on operation of the existing buildings. The Draft EIR use of an existing conditions baseline complies with CEQA and CEQA caselaw and the fact that the NOP was issued at a brief moment in time when the building was vacant between tenants is immaterial. See also Response to Comment A-33, which addresses the baseline condition related to trip generation (and associated transportation fuel). Further, the baseline natural gas, electricity, and water consumption by the existing facility is based on historic conditions when the existing buildings were occupied by Big Lots, as presented in site-specific utility bills from the Southern California Edison, Southern California Gas, and the Cucamonga Valley Water District. It is expected that if a future tenant occupies the existing buildings, they would have similar utility consumption and therefore this data is appropriate to use as the existing conditions baseline. As explained in Response to Comments A-14 and A-15, the existing energy baseline is not zero and the analysis does not need to be revised. Therefore, the baseline energy consumption calculations, including building energy and transportation fuel estimates, do not need to be reduced and no changes to the analysis of energy consumption is required. The Project’s impacts remain less than significant.

⁶⁵ *North County Advocates, supra*, 241 Cal.App.4th at 105.

It should also be noted that the determination of energy impacts is not wholly related to the estimated increase in energy demand. Rather, Appendix G of the CEQA Guidelines also establishes that a project would normally have a significant adverse energy impact if it will: (1) result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; and (2) conflict with or obstruct a State or local plan for renewable energy or energy efficiency. As discussed in Draft EIR Section 4.5, Energy, the Project would be required to comply with the current energy standards, which would ensure that the Project energy demands would not be inefficient, wasteful, or otherwise unnecessary as compared to the existing buildings which were built in 1983 and do not meet the current energy standards. The commenter does not provide any substantial evidence that the Project would result in significant energy impacts based on the established CEQA thresholds of significance.

- A-35 ELMT Consulting (ELMT) prepared the *Habitat Assessment for the Proposed Bridge Point Rancho Cucamonga Project located at 12434 4th Street, City of Rancho Cucamonga, San Bernardino County, California* (Habitat Assessment) dated January 22, 2021, included in Appendix C1, and summarized in Section 4.3, Biological Resources, of the Draft EIR. ELMT has provided technical input for this response and Response to Comment A-37. ELMT's responses are provided in their entirety in Attachment C of this Final EIR.

The commenter incorrectly asserts that ELMT did not accurately assess burrowing owl habitat and potential presence of burrowing owls on the site. ELMT conducted the required assessment of potential impacts to biological resources. ELMT has extensive experience (more than 50 combined years) inventorying, assessing and mitigating, where required, potential impacts to burrowing owls.

The CDFW NOP comment letter did not state that surveys were required. Instead, the CDFW letter stated that "[t]he Project site has the potential to provide suitable foraging and/or nesting habitat for burrowing owl" and then said the City should follow the Staff Report on Burrowing Owl Mitigation (Department of Fish and Game, March 2012) and follow the three progressive steps of 1) habitat assessment; 2) surveys; and 3) an impact assessment. As discussed in the Staff Report, burrowing owls are generally ground dwellers and need clear line-of-sight opportunities for hunting and predator avoidance. Additionally, burrowing owls usually do not dig their own nesting burrows and instead will occupy burrows created by other species such as ground squirrel. Therefore, as part of documenting the presence or absence of burrowing owls on a project site, the first task required by California Department of Fish and Wildlife (CDFW) guidelines is to determine if a site offers suitable habitat for the species. This includes determining if the vegetation on a site is open enough and low enough to allow line-of-sight opportunity for the burrowing owls and where there are sufficient existing burrows on a site (greater than 4 inches in diameter) that could be inhabited by a burrowing owl. ELMT followed the guidance in the 2012 Staff Report on Burrowing Owl Mitigation and conducted a habitat assessment (See Appendix C of the Staff Report) to determine if the site contained suitable foraging and/or nesting habitat. Following these protocols, Dr. Tom McGill (42 years of experience) and Travis McGill (12 years of experience) confirmed that baseline conditions did not provide line-of-sight opportunities and that no burrows were found of

sufficient size to provide nesting opportunities for burrowing owls. Without these key biological feature present, as defined in the 2012 Staff Report, burrowing owls can be assumed to be absent. Because the habitat assessment concluded that the Project site contains no suitable foraging and/or nesting habitat potential, focused surveys were not required, consistent with the CDFW Staff Report. The initial site visit was conducted, according to protocol, and determined focused surveys were not warranted under the guidelines in the 2012 Staff Report on Burrowing Owl Mitigation.

It should also be noted that the Draft EIR was transmitted to CDFW for review; no comments from CDFW were received on the Draft EIR.

As such, the analysis contained in the Habitat Assessment does not require any revision, and no revision to the analyses or conclusions based thereon in the Draft EIR is required.

- A-36 The commenter questions the qualification of the two surveying biologists to assess the site for the potential presences of burrowing owls and to make informed decisions. As identified above, Dr. McGill and Travis McGill have been conducting biological inventories of burrowing owls for over 50 years. Detailed resumes for these individuals are attached to this memo. These individuals have also worked closely with CDFW for managing populations of burrowing owls, including implementing avoidance and monitoring measures, as well as supporting passive and active relocation programs. Travis McGill has supported Jeff Kidd (Kidd Biological) one of the nation's leading burrowing owl experts, for the last ten years, doing inventories throughout the state of California, developing management plans and implementing the recommended avoidance, minimization and mitigation measures. This level of expertise is more than adequate to determine if owls will be present or not and to effectively manage any burrowing owls found within a project site. All management activities are conducted in consultation with CDFW. For this project, the habitat assessment determined that the Project site contains no suitable foraging and/or nesting habitat and burrowing owls were determined to be absent. Therefore, no further actions, including focused surveys, were recommended or warranted.
- A-37 The CEQA Guidelines Appendix G checklist question asks, "Would the Project ... [c]ause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?" This threshold was used by the City in the Draft EIR under Threshold 10.2 and the City properly concluded that implementation of the Project would not result in conflicts with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect and that no impact would occur (refer Draft EIR pages 4.10-10 to 4.10-28).
- A-38 The City agrees that its General Plan can be described as "the constitution for all future developments." In its explanation of the function of the General Plan, the commenter fails to recognize that "A city's findings that [a] project is consistent with its general plan can be reversed only if [they are] based on evidence from which no reasonable person could have reached the same conclusion." *San Franciscans Upholding the Downtown Plan v. City & County of San Francisco* (2002) 102 Cal.App.4th 656, 677. Courts recognize that "the body which adopted the general plan policies in its legislative capacity has unique

competence to interpret those policies when applying them in its adjudicatory capacity. [citations] ***Because policies in a general plan reflect a range of competing interests, the governmental agency must be allowed to weigh and balance the plan's policies when applying them.*** *Naraghi Lakes Neighborhood Preservation Assn. v. City of Modesto* (2016) 1 Cal.App.5th 9, 18-9. A court “may neither substitute [its] view for that of the city council, nor reweigh conflicting evidence presented to that body.” *Id.* at 18. This comment does not address the environmental analysis presented in the Draft EIR, and no further response is required.

- A-39 The City agrees that the Project site is located in a part of the City that historically supported heavy industrial uses, including the former Etiwanda Power Plant. The City also agrees that a General Plan policy addresses other heavy industrial uses being located in proximity to the former power plant. There is, however, nothing in Policy LU-7.1 that restricts or prohibits the use of properties in the area immediately surrounding the former power plant to heavy industrial uses, only that other heavy industrial uses could be located in this area. Policy LU-7.1 is under the goal of “Goal LU-7: Encourage diverse employment-generating land uses that are clean and modern, and that incorporate green technologies.” The Policy has no mandatory language and only provides guidance to “[c]oncentrate heavy industrial and utility-related use in the area immediately surrounding the electrical power plant.” More importantly, the Project would continue to site an industrial use (a warehouse) within an area of the City designated for industrial uses. This policy is intended to prevent heavy industrial uses next to residential and other sensitive uses but does not prevent the City from allowing General Industrial uses in the area immediately surrounding the former power plant.
- A-40 This comment incorrectly identifies that the Project is inconsistent with Policy LU-7.1. The Project is indeed consistent with Policy LU-7.1, as identified in the Draft EIR (page 4.10-19). As explained in the Draft EIR, in 2018, following the preparation of the Rancho Cucamonga General Plan (2010), the NRG Etiwanda Generating Station closed and there is no longer a need for the immediately surrounding areas to be developed exclusively with heavy industrial uses. Other heavy industrial uses, such as the CMT Steel Mill, have recently closed down in that area. The Project’s proposed high cube warehouse uses (an industrial use) are compatible with heavy industrial uses in the area and the Project would not preclude development of heavy industrial uses in the Southeast Focus Area, including at the NRG Etiwanda Generating Station site.

The General Plan Land Use Map splits the Project site on an east-west axis with a “Heavy Industrial” designation on the northern portion of the Property and “General Industrial” designation on the southern portion of the Property. As thoroughly described in the Draft EIR Section 4.10, Land Use and Planning, the Project site is already developed with a warehouse use, and this use is consistent with both the Heavy Industrial and General Industrial General Plan designations. Redevelopment of the site with the same use will not limit the ability of other property owners to develop similar or more intensive heavy industrial uses in the area surrounding the former power plant.

The General Plan Heavy Industrial designation has a maximum Floor Area Ratio (FAR) of 0.5 and “permits heavy manufacturing, compounding, processing or fabrication, **warehousing, storage, freight handling**, and truck services and terminals, as well as supportive service commercial uses. Heavy Industrial areas are located to take advantage of rail lines and arterial roadway access, and to minimize impacts on surrounding land uses.” (Refer to General Plan pages LU-17 LU-18).

The General Plan General Industrial Designation has a probable FAR of 0.4 and a maximum FAR of 0.6, and “permits a **wide range of industrial activities** that include manufacturing, assembling, fabrication, **wholesale supply**, heavy commercial, green technology, and office uses. Where adjacent to residential uses, properties designated General Industrial should be designed for office uses, or site planning should incorporate buffering techniques to minimize noise and traffic impacts associated with the industrial activity.”

The Project therefore proposes a use that is allowed in both the General Industrial and Heavy Industrial land use designations.

The City is in the process of updating its General Plan and has recognized that the Southeast area of the City “was designated for heavy industry in the 1980 General Plan and all subsequent updates.⁶⁶ Heavy industrial uses, such as machinery, manufacturing, **logistics, and warehousing**, were established in former vineyards with very little planning or construction of streets and other infrastructure normally required for industrial districts. Given the area’s adjacency and good access to two interstate freeways and transcontinental railroads; the Southeast area is ideally positioned to receive a range of modern industrial uses.”

Therefore, warehousing and logistic uses, as proposed by the Project, are consistent with the City’s historic vision of heavy industrial uses in the Southeast area. The City recognizes that “[t]he great opportunity in this area is to upgrade directly to modern industrial infrastructure, to capitalize on the prime location and untapped potential for jobs and wealth creation to support Rancho Cucamonga’s continuing ascent as a premier and diversified employment center of the current and future regional economy.” Therefore, a General Plan amendment to General Industrial, that continues to allow for logistics and warehousing in a modern industrial infrastructure is consistent with the General Plan.

The fact that there are no other large undeveloped sites that can accommodate this Project is immaterial to the Project’s consistency with General Plan Policy LU 7-1. The statement cited by the commenter is from the alternatives chapter of the EIR and in full states:

Under existing conditions, the majority of the Southeast Focus Area is developed, with the exception of several vacant parcels. There is no large, undeveloped site in this Focus Area that is similar in size to the Project site (approximately 91.4 acres) that can accommodate the same development proposed by the Project. Other parcels are developed with industrial or other non-residential uses. Consolidating an Alternative Site that is the same size as the Project site would require acquisition of contiguous property, demolition of existing operational structures, and discontinuing existing land uses, which is likely to disrupt existing businesses and operations, and would result in environmental impacts similar to those identified for the Project. These conditions also apply to other areas designated for industrial uses in the Rancho Cucamonga General Plan outside of the Southeast Focus Area.

⁶⁶ City of Rancho Cucamonga General Plan, Public Review Draft May 2021 available at https://www.cityofrc.us/sites/default/files/2021-06/PlanRC_Volume%201_PublicDraft_Final_web.pdf (refer to page 37).

Nothing in this statement is evidence that other properties in the Southeast Area would be prevented from being redeveloped with heavy manufacturing or other heavy industrial uses simply because a portion of the Project site will be changed from Heavy Industrial to General Industrial as a part of this Project. The impact conclusions regarding land use remain unchanged from the Draft EIR.

- A-41 As identified in Draft EIR Section 4.11, Land Use and Planning, there is no longer a need for the area immediately surrounding the former power plant to be limited to heavy industrial uses. Furthermore, the Project's warehouse uses are uses allowed in areas with a heavy industrial land use designation, and the General Plan amendment to General Industrial will still allow for a warehouse use on the Project site. As explained above, the General Plan policy only calls for a "concentration" of heavy industrial uses around the former power plant and does not limit the City's ability in any way to change the land use designation of the Project site.

The City has discretion to determine consistency with its General Plan, and **"because policies in a general plan reflect a range of competing interests, the governmental agency must be allowed to weigh and balance the plan's policies when applying them."** *Naraghi Lakes Neighborhood Preservation Assn. v. City of Modesto* (2016) 1 Cal.App.5th 9, 18-9. The City Council may reasonably conclude that the General Plan Amendment is consistent with the remainder of the General Plan because it permits a use that is permitted under both the Heavy and General Industrial land use designations, and on a site that is currently occupied by a warehouse use. Therefore, the Project on a whole is still consistent with the General Plan and the City's reasonable determination would be afforded great deference by a reviewing court.

The "precarious health of the City's heavy industrial community" is not threatened by a General Plan amendment for a portion of the project site from Heavy Industrial to General Industrial. As explained above, the General Industrial land use designation allows for a broad range of industrial uses. Importantly, "CEQA is concerned with physical changes in the environment ...". Social and economic changes must be addressed under CEQA if they will cause changes in the physical environment. But an economic or social change by itself is not considered a significant effect on the environment." *Chico Advocates for a Responsible Economy v. City of Chico* (2019) 40 Cal.App.5th 839, 847-48 (internal citations omitted). Preservation of heavy industrial land and a threat to the economic health of the industrial community is not an impact under CEQA.

- A-42 As explained in Response to Comments A-40 and A-41, the Draft EIR correctly concluded that the Project is consistent with the City's General Plan and its determination is supported by substantial evidence in the record. The commenter has pointed to no evidence of an environmental impact that results from the alleged inconsistency. Therefore, the City is not required to revise and recirculate the Draft EIR.
- A-43 This comment addresses the Project's consistency with the City's tree preservation policies. The commenter incorrectly asserts that the Draft EIR does not include substantial evidence to conclude that no impact would occur related to conflict with tree protection policies or ordinances. The purpose of the City's tree removal permit requirements outlined in Section 17.16.080 of the City's Development Code is to provide a review process for the removal of heritage trees that are considered to be a community resource.

Development Code Section 17.16.080(D) identifies that (1) no person, firm, or corporation shall remove, relocate, or destroy any heritage tree within the city limits, including an applicant for a building permit, without first obtaining a tree removal permit from the planning director; and (2) no tree removal permit shall be issued for the removal of any heritage tree on any lot associated with a proposal for development, unless all discretionary approvals have been obtained from the City.

As part of the CEQA review process, the City required preparation of a detailed tree inventory. The *Tree Inventory Report for the Bridge Point Rancho Cucamonga Project at 12434 4th Street, Rancho Cucamonga, California*, is provided in Appendix C2 of the Draft EIR and includes a detailed description of each existing tree within the Project site and within the study area for the 6th Street at-grade crossing. The following information is provided for each tree, which is identified by number on exhibits and in the tree data summary matrix: common name, species, number of main trunks, diameter at breast height, tree height, canopy diameter, health rating, aesthetic rating, and whether or not the tree is a heritage tree. Where applicable, notes were provided regarding characteristics of the tree or its location that may be relevant (e.g., limb failure, location over light poles, etc.). In addition to the biological resource characteristics of the trees and associated biological resource impacts associated with removal of the trees addressed in Draft EIR Section 4.3, Biological Resources, the potential visual impacts associated with removal of trees is addressed in Draft EIR Section 4.1, Aesthetics. The conceptual landscape plan presented on Figure 3-13 of the Draft EIR (page 3-24) clearly identifies that based on the current site plan, 24 existing heritage trees would be protected in place, and the remaining heritage trees to be removed would be replaced at a 1:1 ratio with like trees.

The tree information presented in the Draft EIR is extensive and will assist the City Council in making the required findings relative to removal of onsite trees, and whether or not to issue a tree removal permit. As noted herein, no findings associated with any Project approvals have yet been made. These findings will be appropriately made by the Planning Director at the time the tree removal permit is issued, based on final project design information, including the final landscape plan. It is at the discretion of the Planning Director to approve, conditionally approve or deny the application for a tree removal permit, and information in the Draft EIR about existing trees to be removed will be used to inform that decision making process but will not be the only information considered. Compliance with the City's tree removal permit requirements is mandatory and, as identified above, tree removal cannot occur until a tree removal permit is issued ensuring compliance with the City's tree protection policies. The commenter has not provided substantial evidence that the Project would conflict with the City's tree protection policies.

- A-44 This comment correctly states the findings the City is required to make when it approves a Development Agreement. The Draft EIR includes the Development Agreement as one of the Project-related approvals. If the City approves the Development Agreement, it will support its approval with findings. Given that the City has not yet approved the Development Agreement, this comment requires no further response.
- A-45 As explained in Response to Comments A-40 and A-41, the Project is consistent with the General Plan and with Policy LU-7.1 As explained in the Draft EIR and in the responses to comments presented in this Final EIR, there are no unmitigated potentially significant

impacts. As explained in Response to Comments A-27 through A31, the Project does not have unmitigated construction health impacts and also does not have unmitigated construction noise impacts. If the City adopts a Development Agreement for this Project, it will make findings supported by substantial evidence.

- A-46 The Draft EIR analyzes and discloses the potentially significant impacts of the Project, including approval of the Development Agreement. As the environmental document for the Project, the Draft EIR is not required to make any of the findings required to approve the Development Agreement. The City will use the EIR to determine if it can make the required findings. The commenter is prematurely criticizing findings that have not yet been made. All of the information required for the City to make its decision on the environmental impacts of the Project are included in the Draft EIR and Final EIR and the City is therefore not required to revise and recirculate the EIR.
- A-47 The commenter is correct that the Project includes approval of tentative map. This is listed in Table 3-4 of the Draft EIR as one of the Project approvals and was analyzed as a component of the Project.
- A-48 As in the comments on the Development Agreement, the commenter criticizes findings that have not yet been made. All of the information required for the City to make its decision on the environmental impacts of the Project are included in the Draft EIR and Final EIR. As explained in Response to Comments Response to Comments A-40 and A-41, the Project is consistent with the General Plan. And as identified through the analysis presented in the Draft EIR and further explained in this Final EIR, and throughout the administrative record for this proposed project, there are no unmitigated environmental impacts anticipated as a result of the Project. Therefore, should the City decide to approve the tentative map, it will make the required findings based on substantial evidence.
- A-49 This conclusion statement provides a summary of the incorrect assertions made throughout Comment Letter A and addressed in the responses to comments presented above. Potentially significant impacts have been adequately addressed in Draft EIR Section 4.1 through Section 4.15, and are summarized in Draft EIR Section 1, Executive Summary. Notwithstanding the Project's less than significant impacts, in response to a generic comment letter from CARB, the Project Applicant has voluntarily agreed to incorporate additional mitigation measures during construction and operation that would further reduce the Project's less than significant impacts (refer to modified MM 2-1 and new MM 2-2 presented in Response to Comment A-22 above).

Responses to Clark & Associates – Comment Letter A Exhibit A

- A-50 This introductory comment summarizes information presented in the Draft EIR about the Project and the environmental setting. This comment does not raise any issues with the environmental analysis provided in the Draft EIR and thus no response is required.
- A-51 This general comment summarizes the topical issues addressed in the Draft and incorrectly asserts that the analysis of baseline conditions is incorrect. This comment provides a summary of the comments provided in the remainder of comment letter, which are appropriately addressed in Responses to Comments A-52 through A-69 below.
- A-52 Refer to Response to Comments A-14 and A-15 above, which address the baseline conditions evaluated in the Draft EIR. As identified, the baseline condition that was the

basis for the air quality and GHG emissions analysis presented in the Draft EIR accurately reflects the site's environmental condition. Baseline emissions are properly calculated based on operation of the existing buildings. The Draft EIR use of an existing conditions baseline complies with CEQA and CEQA case law. As discussed in more detail in Response to Comments A-14 and A-15, the NOP was issued at a brief time when the building was temporarily vacant between tenants. This vacancy occurred during the beginning of the COVID and pandemic and while the building owner sought a new tenant for the existing building. Therefore, the baseline emissions do not need to be reduced, and no changes to the analysis of air quality and GHG emissions impacts are required. The Project's impacts would remain less than significant. Notwithstanding the Project's less than significant impacts, in response to a generic comment letter from CARB, the Project Applicant has voluntarily agreed to incorporate additional mitigation measures that would further reduce the Project's less than significant air quality and GHG emissions impacts (refer to modified MM 2-1 and new MM 2-2 presented in Response to Comment A-22 above).

- A-53 The commenter is correct that corrections to Draft EIR Table 4.2-13, Summary of Peak Operational Emissions, are required. These corrections are included in Section 3.0, Clarifications and Revisions, of this Final EIR, and are required to accurately reflect the TRU pollutant emissions calculations presented in Table 3-11 of the Air Quality Impact Analysis included in Appendix B1 of the Draft EIR, and resulting net emissions.

The commenter incorrectly asserts that additional corrections are needed to remove the existing air pollutant emissions that are also considered. As discussed above, the existing air pollutant emissions are appropriately considered in the air quality analysis. These emissions have been left in Draft EIR Table 4.2-13 and subtracted from the Project's estimated air pollutant emissions to determine the net emissions resulting from the Project.

In response to this comment, the following corrections are hereby incorporated into the Draft EIR; revised Table 4.2-13 is presented in its entirety in Section 3.0, Draft EIR Clarifications and Revisions, of this Final EIR. These corrections do not change the Draft EIR air quality analysis conclusion and do not require recirculation of the Draft EIR. These corrections are included in the Errata.

| | Emissions (lbs/day) | | | | | |
|--|----------------------------------|------------------------------------|------------------------------------|---------------------------------|----------------------------------|----------------------------------|
| | VOC | NOx | CO | SOx | PM10 | PM2.5 |
| Summer | | | | | | |
| TRUs | 0.26 <u>1.03</u> | 0.26 <u>8.79</u> | 0.26 <u>11.44</u> | 0.26 <u>0</u> | 0.26 <u>0.21</u> | 0.26 <u>0.19</u> |
| Total Maximum Daily Emissions | 63.18 <u>63.96</u> | 133.14 <u>141.67</u> | 179.52 <u>190.71</u> | 1.19 <u>0.94</u> | 64.48 <u>64.44</u> | 18.64 <u>18.58</u> |
| <i>Existing Emissions</i> | 47.97 | 153.26 | 160.24 | 0.95 | 51.03 | 16.22 |
| Net Emissions (Project – Existing) ^a | 15.21 <u>15.99</u> | -20.12 <u>-11.59</u> | 19.28 <u>30.47</u> | 0.25 <u>-0.01</u> | 13.46 <u>13.41</u> | 2.42 <u>2.35</u> |
| SCAQMD Regional Threshold | 55 | 55 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | NO | NO | NO | NO | NO | NO |
| Winter | | | | | | |
| TRUs | 0.26 <u>1.03</u> | 0.26 <u>8.79</u> | 0.26 <u>11.44</u> | 0.26 <u>0</u> | 0.26 <u>0.21</u> | 0.26 <u>0.19</u> |
| Total Maximum Daily Emissions | 62.29 <u>63.07</u> | 136.48 <u>145.01</u> | 147.71 <u>158.89</u> | 1.16 <u>0.90</u> | 64.41 <u>64.36</u> | 18.61 <u>18.55</u> |
| <i>Existing Emissions</i> | 47.16 | 156.39 | 136.44 | 0.92 | 50.95 | 16.20 |
| Net Emissions (Project – Existing) ^a | 15.14 <u>15.91</u> | -19.91 <u>-11.38</u> | 11.26 <u>22.45</u> | 0.24 <u>-0.02</u> | 13.46 <u>13.41</u> | 2.42 <u>2.35</u> |
| SCAQMD Regional Threshold | 55 | 55 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | NO | NO | NO | NO | NO | NO |

A-54 This comment incorrectly asserts that Draft EIR Table 4.7-6, Project GHG Emissions, should be revised to remove the existing emissions calculations. See Response to Comments A-14 and A-15 regarding the baseline used for this Project. As discussed above, the existing GHG emissions are appropriately considered in the GHG emissions analysis. These emissions have been left in Draft EIR Table 4.7-6 and subtracted from the Project's estimated GHG emissions to determine the net emissions resulting from the Project. No changes to the Draft EIR are required.

A-55 This comment summarizes information presented in the mobile source HRA included in Appendix B-1 of the Draft EIR and introduces criticism of the air dispersion model. The responses to these issues are included in the Response to Comments A-56, A-57, and A-58 below.

- A-56 This comment incorrectly asserts that the HRA should consider emissions from building downwash. Refer to Response to Comment A-23, which addresses this comment. As identified, the commenter should be aware that building downwash effect does not apply to the volume source algorithm per US EPA and SCAQMD guidance and therefore is not applicable to the analysis for the Project.
- A-57 The commenter is incorrect and makes an unfounded statement that the number of receptors creates a “false sense of precision within the model.” The Draft EIR and supporting technical HRA report include the nearest 20 receptor locations representing the nearest residential, worker, and school child receptors, as illustrated in Exhibit 2-F of the HRA report. These receptors were placed geospatially at locations downwind from the Project site. The commenters assertion that a 100-meter receptor grid is required is unfounded and misleading. The purpose of providing a receptor grid is to determine the potential downwind extent of elevated risk levels and to develop a risk contour. In the case of the Project, none of the modeled receptors are found to be remotely close to the applicable thresholds, as such a 100-meter grid and contour map would not be useful and is not required. Lastly, the commenter actually states the reason why a gridded receptor map should be provided to determine “the area where impacts are greater than 1 in a million”. As shown in the Draft EIR and supporting technical HRA report, the Project’s risk does not exceed 1 in a million, Therefore, there is no impact area to be identified via a gridded receptor map. Therefore, the Draft EIR does not require revision.
- A-58 This comment addresses the construction assumptions that were the bases for the air quality analysis in the Draft EIR. Refer to Response to Comment A-24, above, which addresses this comment and corrects the Draft EIR text to accurately reflect construction occurring five days per week as presented in the Air Quality Impact Analysis included in Appendix B1 of the Draft EIR.
- A-59 This comment addresses the number of TRUs per day analyzed in the HRA included in Appendix B2 of the Draft EIR. Refer to Response to Comment A-25, which addresses this comment, and explains that the HRA indeed was based on 81 TRUs per day (not 80 TRUs per day as stated by the commenter). No changes to the analysis presented in the Draft EIR are required.
- A-60 This comment incorrectly asserts that the modeled emission rates for trucks in Table 2-4 of the Air Quality Impact Analysis (included in Appendix B of the Draft EIR) is incorrect. The commenter is referred to footnote “d” on the aforementioned Table 2-4 that the commenter cites in their comment. This footnote identifies that TRU emissions are included in the total modeled emissions rate. The column on truck emissions rate idling represents non-TRU sources. Accordingly, no changes to the Draft EIR or supporting Air Quality Impact Analysis are required.
- A-61 This comment incorrectly asserts that the Phase II Investigation failed to assess chemicals of concern related from the former Kaiser Steel Mill. This issue is addressed in Response to Comments A-27 and A-28 and in the letter from Ardent Environmental Group included in Attachment C of this Final EIR. As identified, Ardent concluded that aerially deposited chemicals from the Kaiser Steel Plant are not present at the Project site at levels that would impact redevelopment of the site. This is based on the distance of the former Kaiser Steel Plant from the site, prevailing wind direction, extensive studies completed at the Kaiser Steel property since 1976, the results of two independent Phase I ESAs completed for the site, and lack of arsenic (one of Kaiser Steel’s reported COPCs) detected during subsurface

investigations completed at the site. Therefore, the Phase I ESA and subsequent Phase II investigation completed by Ardent are adequate to address the environmental concerns at the site. Further, none of the information provided by Mr. Clark indicates the presence, or even possible presence, of carcinogenic compounds at the site that could be disturbed during redevelopment.

- A-62 This comment is a conclusion statement that summarizes the commenters opinion that recirculation of the Draft EIR is required. As presented in the responses to comments above, there are no changes or revisions to the Draft EIR that would require recirculation of the Draft EIR.

Responses to Smith Engineering Management – Comment Letter A Exhibit B

- A-63 This introductory comment summarizes the qualifications of the commenter. This comment does not raise any issues with the environmental analysis provided in the Draft EIR and thus no response is required.

- A-64 As noted by the commenter, the City adopted VMT significance thresholds for determining the significance of transportation impacts under CEQA. The City Council adopted these thresholds via Resolution 2020-056 on June 17, 2020. The thresholds were developed after a public review process consisting of a joint coordination between the San Bernardino County Transportation Authority and its member agencies. The guidelines were developed by an expert traffic consulting firm (Fehr & Peers) and are based on substantial evidence. Following an extensive public review process, the thresholds were adopted more than a year ago and were not challenged. Therefore, the City's generally applicable thresholds cannot be challenged now. CEQA § 21167(e); California Code of Civil Procedure §1094.6.

City Council staff report related to resolution 2020-056 is available online here: <https://rcdocs.cityofrc.us/WebLink/DocView.aspx?id=568102&dbid=0&repo=RanchoCucamonga> and provides substantial evidence to support the City's adoption of its VMT threshold. The City specifically noted that "The OPR recommended threshold of 15% below existing average VMT does not illustrate a connection to the other SB 743 objectives related to statewide goals to promote public health through active transportation, infill development, multimodal transportation networks, and a diversity of land uses. Recommending a reduction below baseline levels is consistent with these objectives, but the numerical value has not been tied to specific statewide values for each objective or goal. Reductions below the existing baseline is the usual way of analyzing environmental impacts under CEQA."

The City also noted that "The intent of SB 743 is to promote infill development and reduce GHGs by promoting development in VMT- efficient areas (i.e., Cities that have VMT per service population below the County average). As identified above, the City of Rancho Cucamonga land uses are currently more efficient on average from a VMT per service population perspective than the average of the County of San Bernardino as a whole; therefore, comparisons to the City average are more in line with the legislative intent of SB 743."

The City has discretion to adopt its own thresholds of significance, and the commenter is wrong to allege that the City must adopt OPR's recommended threshold of 85% of average.⁶⁷ First, the introduction to the OPR Technical Advisory explicitly states that "[t]he purpose of this document is to provide advice and recommendations, which agencies and other entities may use at their discretion. This document does not alter lead agency discretion in preparing environmental documents subject to CEQA."

Second, the OPR Technical Advisory recommends the use of screening thresholds that are consistent with those adopted by the City here. The City Guideline's "Low VMT Area Screening" is consistent with the OPR Technical Advisory's "Map-Based Screening for Residential and Office Projects." As stated in the OPR Technical Advisory, "...projects that locate in areas with low VMT, and that incorporate similar features (i.e., density, mix of uses, transit accessibility), will tend to exhibit similarly low VMT" (OPR Technical Advisory pg. 12). The Project here is consistent with the underlying land use and does not propose to change other factors that would prohibit the use of map-based screening.

Finally, the OPR Technical Advisory recommends its 85% of average threshold for residential, office, and mixed-use projects. But for "other project types" OPR notes that "Lead agencies, using more location-specific information, may develop their own more specific thresholds, which may include other land use types. In developing thresholds for **other project types, or thresholds different from those recommended here**, lead agencies should consider the purposes described in section 21099 of the Public Resources Code and regulations in the CEQA Guidelines on the development of thresholds of significance (e.g., CEQA Guidelines, § 15064.7)." OPR Technical Advisory page 17 (Emphasis added).

The Project here is an industrial warehouse project, and OPR has not recommended or adopted any particular threshold that applies to this Project. Therefore, the City's threshold (impacts are significant if the baseline project generated VMT per service population exceeds the City) as applied to this Project are entirely consistent with OPR's Technical Advisory.

- A-65 This comment incorrectly asserts that the Project's VMT analysis is inaccurate. Refer to Response to Comment 33, above, which addresses this comment based on technical input from Urban Crossroads. Additionally, as explained in Response to Comment A-64 above, the City used its discretion and adopted its own thresholds of significance, and these thresholds were not challenged. The commenter's comparison to OPR's recommended thresholds is therefore not applicable here and any allegation that the Project has a significant VMT impacts is baseless. Further, in an effort to conduct a conservative analysis and overstate as opposed to understate potential traffic impacts, the VMT analysis took into consideration 100% of the Project traffic and did not apply and reductions (take credit) for the existing uses on the site.

⁶⁷ State of California Governor's Office of Planning and Research. December 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. Available: http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

The legislative intent behind SB 743 is to reduce greenhouse gas emissions (OPR Technical Guidance, p. 1) and as shown in Draft EIR Section 4.7, Greenhouse Gas Emissions, the Project would result in less than significant GHG impacts. Moreover, in response to a generic comment letter from CARB, the Project Applicant has voluntarily agreed to incorporate additional mitigation measures that would further reduce the Project's less than significant GHG emissions (refer to modified MM 2-1 and new MM 2-2 presented in Response to Comment A-22 above).

- A-66 This comment addresses the baseline condition analyzed in the Draft EIR; however, no evidence is given as to why the reviewer disputes the commonly used method of taking credit for the existing baseline. The commenter does not provide substantial evidence that the project site was underutilized. Please refer to Response to Comment A-34, above, which addresses this comment based on technical input from Urban Crossroads. Additionally, see Response to Comment A-33, above, regarding the Project's trip generation.
- A-67 As described in Section 3.4.3G, Operational Characteristics, of the Draft EIR (pages 3-38 and 3-39), the Project is not intended to operate a high-cube fulfillment sort-facility warehouse, and the current site plan does not support this on-site use. For instance, a sort-facility operation on-site may not be feasible based on the parking accommodated as the design of the proposed Project does not adequately supply the required employee parking needed to support a sort fulfillment center use. Notwithstanding, and contrary to the commenter's assertion that the Draft EIR does not analyze the potential impacts associated with a sort fulfillment center use, to provide a conservative analysis, the City analyzed the Project as a sort fulfillment center use and as a non-sort fulfillment center use. The Traffic Memo included in Appendix L2 of the Draft EIR) was prepared and included trip generation information for a sort-facility warehouse. To the commentor's point, a sort-facility has high trip generation, which is largely associated with the high volume of employees required to support this type of facility. This is demonstrated in the Traffic Memo which identifies an average daily traffic (ADT) volume of 4,008 trips for a non-sort facility (4,804 PCE trips), and 13,070 ADT (13,914 PCE trips) with a sort facility (prior to consideration of trips generated by the existing buildings). This trip generation information was the basis for supplemental analyses included in the respective sections of the Draft EIR related to air quality, energy, greenhouse gas emissions, off-site traffic noise, and transportation/VMT. As identified through the supplemental analyses the Project, operated as a non-sort fulfillment center or a sort fulfillment center, would have less than significant impacts. Further, the Project Applicant has agreed as part of the proposed Development Agreement that the proposed buildings would not be operated as sort use fulfillment centers.

- A-68 This conclusion statement reflects the opinion that recirculation of the Draft EIR is required. As presented in the responses to comments above, there are no changes or revisions to the Draft EIR that would require recirculation of the Draft EIR.

Responses to Wilson Ihrig – Comment Letter A Exhibit C

- A-69 This comment addresses the methods for conducting the conducting the Project's construction-related noise impact analysis (use of reference noise levels and FHWA's

RCNM). Please refer to Responses to Comments A-29 and A-30, above, which address this comment based on technical input from Urban Crossroads.

COMMENT LETTER B

From: markrushart@gmail.com <markrushart@gmail.com>
Sent: Tuesday, June 22, 2021 3:11 PM
To: McPherson, Sean <Sean.McPherson@cityofrc.us>
Cc: Mary Ann Ruiz, San Gorgonio Chapter Chair <reply-fe96157575630c7c76-418_HTML-45694398-7229893-3@emails.sierraclub.org>; NATASHA WALTON <notlaw_17@msn.com>; Janice Elliott <jelliott@aol.com>
Subject: Bridge Point Project

Date: June 21, 2021

To: Sean McPherson, Senior Planner
City of Rancho Cucamonga Planning Department
10500 Civic Center Drive
Rancho Cucamonga, CA 91730

I writing this letter in regards to the proposed project Bridge Point Rancho Cucamonga Project located at 12434 4th Street formerly occupied by Big Lots. The proposed warehouse buildings 1 and 2 have 2,120,500sf of warehouse space and 32,000sf of ancillary office space. As resident of Rancho Cucamonga and member of the local chapter of the Sierra Club, I'm writing this letter to express my concern about the environmental impact of this project. We are already suffering the impact of poor air quality and traffic congestion and this project will only serve to exasperate the problem.

Due to the negative environmental impact, I'm suggesting that solar panels be required on the buildings roofs, infrastructure built in to accommodate future electric charging stations for delivery trucks, all electric yard trucks and forklifts and EV charging stations for cars in the parking lots. Another suggestion would be a community benefit fund for truckers to have down payments on electric trucks. The big problem is the air quality and green-house gas emissions, which are not addressed at all, and the increased emissions in the SC air basin which is already out of compliance.

Pursuant to the CEQA Guidelines Section 15082, I am submitting my comments and suggestions. Please place me on the mailing list for any future correspondence regarding this project.

Sincerely:

Mark Rush
7938 Montara Ave
Rancho Cucamonga, CA 91730
markrushart@gmail.com
909-996-2014

B-1

Responses to Comment Letter B

Mark Rush

June 22, 2021 (Late Comment)

B-1 The commenter expresses general concern regarding potential environmental impacts resulting from the Project, including air quality and greenhouse gas (GHG) emissions, but does not specifically comment on the analysis provided in the Draft EIR. Notably, this comment indicates that air quality and GHG emissions impacts are not addressed, while in fact they are evaluated in detail in Draft EIR Sections 4.2 and 4.7, respectively, and within the supporting technical studies appended to the Draft EIR. As identified in the Draft EIR, the Project's operational air quality and GHG emissions impacts would be less than significant; therefore, no mitigation is required. As the impacts are less than significant, additional mitigation including mitigation suggested by the commenter, is not required. Notwithstanding the lack of significant impacts, in response to a comment letter from CARB (refer to Comment Letter C), the Project Applicant has voluntarily agreed to incorporate additional mitigation measures that have been determined feasible for the Project and that would further reduce the Project's less than significant air quality and GHG emissions impacts during construction and operation. MM 2-1 has been expanded to include additional construction-related mitigation requirements, and MM 2-2 includes operational requirements. The expanded and new mitigation requirements are presented below and included in Section 3.0, Draft EIR Clarifications and Revisions, of this Final EIR.

MM 2-1 Prior to grading permit and building permit issuance, the City of Rancho Cucamonga shall verify that the following applicable notes are included on the grading plans and building plans. Project contractors shall be required to ensure compliance with these notes and permit periodic inspection of the construction-site by City of Rancho Cucamonga staff or its designee to confirm compliance. These notes also shall be specified in bid documents issued to prospective construction contractors.

- During construction activity, Project construction contractors shall ensure that off-road diesel construction equipment complies with applicable California Air Resources Board (CARB) emissions standards or equivalent and shall ensure that all construction equipment is tuned and maintained in accordance with the manufacturer's specifications.
- The following off-road construction equipment shall be CARB Tier III certified or better, by construction phase as shown:
 - Demolition/Crushing:
 - Boom Lift
 - Concrete/Industrial Saws
 - Crusher
 - Skid Steer
 - Utilities/Infrastructure:
 - Trencher
 - Building Construction:
 - Forklifts

- Generator Sets
 - Welders
- Paving:
 - Pavers
 - Paving Equipment
 - Rollers
- Architectural Coating
 - Air Compressors
- The following off-road construction equipment shall be CARB Tier IV Final certified or better, by construction phase as shown:
 - Demolition/Crushing:
 - Breakers
 - Excavators
 - Generator Sets
 - Rubber Tired Dozers
 - Grading:
 - Crawler Tractors
 - Excavators
 - Graders
 - Rubber Tired Dozers
 - Scrapers
 - Utilities/Infrastructure:
 - Excavators
 - Skip Loaders/Backhoes
 - Building Construction
 - Cranes
 - Crawler Tractors
 - Laser Screed
 - Scissor Loaders/Backhoes
 - Skip Loaders/Backhoes
- **Idling of heavy construction equipment shall be restricted to two minutes and electrical hook ups shall be provided to support use of zero and near-zero construction equipment and tools whenever feasible.**
- **Off-road equipment with a power rating below 19 kilowatts (e.g., plate compactors, pressure washers) used during project construction shall be electric powered, provided that it is commercially available, which may be plug-in (electric) or battery powered.**

- Heavy-duty trucks used for dirt and material hauling during construction shall meet the United States Environmental Protection Agency/California Air Resource Board truck engine standard for Model Year 2014 or later.

MM 2-2 The Project Applicant shall include the following operational requirements in the final building design or stipulate the operational requirements for building occupants, as appropriate:

Project Design

- Make truck dock positions EV-ready by installing conduits at truck dock positions for future accommodation of light-duty and/or heavy-duty electric trucks and charging stations.

Lease Agreement and Owner-Occupant Requirements

- Those loading docks used by trucks with transport refrigeration units (TRU) as determined by a cold storage tenant shall be equipped with electrical hookups (applicable to cold storage tenant lease agreements only).
- TRUs entering the Project site shall be plug-in capable (applicable to cold storage tenant lease agreements only).
- On-site TRU diesel engine run time shall be no longer than 15 minutes (applicable to cold storage tenant lease agreements only).
- Service equipment (e.g., yard hostlers, yard equipment, forklifts, and pallet jacks) shall be powered by alternative fuels, electrical batteries or other alternative/non-diesel fuels (e.g., propane) that do not emit diesel particulate matter, and that are low or zero emission.
- Trucks and support equipment shall not idle longer than five minutes while on site.

Additionally, the Project would incorporate solar energy facilities consistent with the Project's approved Development Agreement. Finally, SCAQMD adopted Rule 2305 - Warehouse Indirect Source Rule - Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program and Proposed Rule 316 - Fees for Rule 2305 on May 7, 2021. While these new rules are subject to a legal challenge, it is worth noting that the new Rules are currently applicable to the Project, and if upheld by the courts, would continue to be applicable to the Project when it is developed and operational. As a result, these new rules likely would result in reductions to Project operational emissions beyond those identified in the Draft EIR.

COMMENT LETTER C



Gavin Newsom, Governor
Jared Blumenfeld, CalEPA Secretary
Liane M. Randolph, Chair

June 24, 2021

Sean McPherson
Senior Planner
City of Rancho Cucamonga Planning Department
10500 Civic Center Drive
Rancho Cucamonga, California 91730
sean.mcpherson@cityofrc.us

Dear Sean McPherson:

Thank you for providing the California Air Resources Board (CARB) with the opportunity to comment on the Bridge Point Rancho Cucamonga Project (Project) Draft Environmental Impact Report (DEIR), State Clearinghouse No. 2020100056. The Project would result in the demolition of a 23,240 square foot retail building and 1,431,000 square foot warehouse building and allow for the construction of two high-cube warehouse buildings totaling 2,175,000 square feet. Once in operation, the Project would generate approximately 4,008 daily vehicle trips, including 536 daily heavy-duty truck trips, along local roadways. The Project is located within the City of Rancho Cucamonga (City), California, which is the lead agency for California Environmental Quality Act (CEQA) purposes.

Industrial development, such as those proposed under the Project, can result in high daily volumes of heavy-duty diesel truck traffic and operation of on-site equipment (e.g., forklifts and yard tractors) that emit toxic diesel emissions, and contribute to regional air pollution and global climate change.¹ Due to the Project's proximity to residences already disproportionately burdened by multiple sources of pollution, CARB's comments below express concerns with the potential cumulative air quality impacts associated with the construction and operation of the Project.

The Project Would Increase Exposure to Air Pollution in Disadvantaged Communities

The Project, if approved, will expose nearby communities to elevated levels of air pollution. There Project-site is located approximately 360 feet from the San Bernardino County West Valley Detention Center and 5,370 feet from existing residences. The community is near existing toxic diesel particulate matter (diesel PM) emission sources, which include existing industrial uses and vehicular traffic along Interstate 15 (I-15) and Interstate 10 (I-10). Due to the Project's proximity to inmates in a county jail and residences already burdened by

1. With regard to greenhouse gas emissions from this project, CARB has been clear that local governments and project proponents have a responsibility to properly mitigate these impacts. CARB's guidance, set out in detail in the Scoping Plan issued in 2017, makes clear that in CARB's expert view, local mitigation is critical to achieving climate goals and reducing greenhouse gases below levels of significance.

C-1

C-2

C-3

COMMENT LETTER E

Sean McPherson
June 24, 2021
Page 2

multiple sources of air pollution, CARB is concerned with the potential cumulative health impacts associated with the construction and operation of the Project.

The State of California has placed additional emphasis on protecting local communities from the harmful effects of air pollution through the passage of Assembly Bill 617 (AB 617) (Garcia, Chapter 136, Statutes of 2017). AB 617 is a significant piece of air quality legislation that highlights the need for further emission reductions in communities with high exposure burdens, like those in which the Project is located. Diesel PM emissions generated during the construction and operation of the Project would negatively impact the community, which is already impacted by air pollution from existing industrial uses and vehicular traffic along I-15 and I-10.

Through its authority under Health and Safety Code section 39711, the California Environmental Protection Agency (CalEPA) is charged with the duty to identify disadvantaged communities. CalEPA bases its identification of these communities on geographic, socioeconomic, public health, and environmental hazard criteria (Health and Safety Code, section 39711, subsection (a)). In this capacity, CalEPA currently defines a disadvantaged community, from an environmental hazard and socioeconomic standpoint, as a community that scores within the top 25 percent of the census tracts, as analyzed by the California Communities Environmental Health Screening Tool Version 3.0 (CalEnviroScreen). CalEnviroScreen uses a screening methodology to help identify California communities currently disproportionately burdened by multiple sources of pollution. The census tract containing the Project is within the top 15 percent for Pollution Burden² and is considered a disadvantaged community; therefore, CARB urges the City to ensure that the Project does not adversely impact neighboring disadvantaged communities.

The Final EIR Should Include More Mitigation Measures to Further Reduce the Project's Air Pollution Emissions

The DEIR concluded that the Project's construction nitrogen oxide (NO_x) emissions would exceed the South Coast Air Quality Management District's significance threshold and would result in a significant impact. The DEIR included Mitigation Measure 2-1 to reduce the Project's significant impact on air quality to a less than significant level. This mitigation measure provides a list of construction equipment that would be required to meet either Tier 3 or Tier 4 emissions standards. To further reduce the Project's air pollutant emissions, CARB urges the City and applicant to implement the emissions reduction measures listed in Attachment A of this letter in the Final Environmental Impact Report.

Conclusion

To reduce the exposure of toxic diesel PM emissions in disadvantaged communities already impacted by air pollution, the final design of the Project should include all existing and emerging zero-emission technologies to minimize diesel PM and NO_x emissions, as well as

2. Pollution Burden represents the potential exposure to pollutants and the adverse environmental conditions caused by pollution.

C-3
(cont)

C-4

C-5

COMMENT LETTER E

Sean McPherson
June 24, 2021
Page 3

the GHGs that contribute to climate change. CARB encourages the city to implement the measures listed in this comment letter to reduce the Project's construction and operational air pollution emissions.

Given the breadth and scope of projects subject to CEQA review throughout California that have air quality and greenhouse gas impacts, coupled with CARB's limited staff resources to substantively respond to all issues associated with a project, CARB must prioritize its substantive comments here based on staff time, resources, and its assessment of impacts. CARB's deliberate decision to substantively comment on some issues does not constitute an admission or concession that it substantively agrees with the lead agency's findings and conclusions on any issues on which CARB does not substantively submit comments.

CARB appreciates the opportunity to comment on the DEIR for the Project and can provide assistance on zero-emission technologies and emission reduction strategies, as needed. Please include CARB on your State Clearinghouse list of selected State agencies that will receive the DEIR as part of the comment period. If you have questions, please contact Stanley Armstrong, Air Pollution Specialist via email at stanley.armstrong@arb.ca.gov.

Sincerely,



Robert Krieger, Branch Chief, Risk Reduction Branch

Attachment

cc: See next page.

C-5
(cont)

C-6

COMMENT LETTER E

Sean McPherson
June 24, 2021
Page 4

cc: State Clearinghouse
state.clearinghouse@opr.ca.gov

Carlo De La Cruz, Senior Campaign Representative, Sierra Club
carlo.delacruz@sierraclub.org

Lijin Sun, Program Supervisor, CEQA Intergovernmental Review, South Coast Air
Quality Management District
lsun@aqmd.gov

Morgan Capilla, NEPA Reviewer, U.S. Environmental Protection Agency, Air Division,
Region 9
capilla.morgan@epa.gov

Taylor Thomas, Research and Policy Analyst, East Yard Communities for Environmental
Justice
tbthomas@eycej.org

Ed Alma Marquez, Policy Analyst, Center for Community Action and Environmental
Justice
alma.m@ccaej.org

Stanley Armstrong, Air Pollution Specialist, Risk Reduction Branch

COMMENT LETTER E

Attachment A

COMMENT LETTER E

ATTACHMENT A

**Recommended Air Pollution Emission Reduction Measures
for Warehouses and Distribution Centers**

The California Air Resources Board (CARB) recommends developers and government planners use all existing and emerging zero to near-zero emission technologies during project construction and operation to minimize public exposure to air pollution. Below are some measures, currently recommended by CARB, specific to warehouse and distribution center projects. These recommendations are subject to change as new zero-emission technologies become available.

Recommended Construction Measures

1. Ensure the cleanest possible construction practices and equipment are used. This includes eliminating the idling of diesel-powered equipment and providing the necessary infrastructure (e.g., electrical hookups) to support zero and near-zero equipment and tools.
2. Implement, and plan accordingly for, the necessary infrastructure to support the zero and near-zero emission technology vehicles and equipment that will be operating on site. Necessary infrastructure may include the physical (e.g., needed footprint), energy, and fueling infrastructure for construction equipment, on-site vehicles and equipment, and medium-heavy and heavy-heavy duty trucks.
3. In construction contracts, include language that requires all off-road diesel-powered equipment used during construction to be equipped with Tier 4 or cleaner engines, except for specialized construction equipment in which Tier 4 engines are not available. In place of Tier 4 engines, off-road equipment can incorporate retrofits, such that, emission reductions achieved equal to or exceed that of a Tier 4 engine.
4. In construction contracts, include language that requires all off-road equipment with a power rating below 19 kilowatts (e.g., plate compactors, pressure washers) used during project construction be battery powered.
5. In construction contracts, include language that requires all heavy-duty trucks entering the construction site, during the grading and building construction phases be model year 2014 or later. All heavy-duty haul trucks should also meet CARB's lowest optional low-oxides of nitrogen (NO_x) standard starting in the year 2022.¹

¹ In 2013, CARB adopted optional low-NO_x emission standards for on-road heavy-duty engines. CARB encourages engine manufacturers to introduce new technologies to reduce NO_x emissions below the current mandatory on-road heavy-duty diesel engine emission standards for model-year 2010 and later. CARB's optional low-NO_x emission standard is available at: <https://ww2.arb.ca.gov/our-work/programs/optional-reduced-nox-standards>.

C-7

COMMENT LETTER E

6. In construction contracts, include language that requires all construction equipment and fleets to be in compliance with all current air quality regulations. CARB is available to assist in implementing this recommendation.

Recommended Operation Measures

1. Include contractual language in tenant lease agreements that requires tenants to use the cleanest technologies available, and to provide the necessary infrastructure to support zero-emission vehicles and equipment that will be operating on site.
2. Include contractual language in tenant lease agreements that requires all loading/unloading docks and trailer spaces be equipped with electrical hookups for trucks with transport refrigeration units (TRU) or auxiliary power units. This requirement will substantially decrease the amount of time that a TRU powered by a fossil-fueled internal combustion engine can operate at the project site. Use of zero-emission all-electric plug-in TRUs, hydrogen fuel cell transport refrigeration, and cryogenic transport refrigeration are encouraged and can also be included in lease agreements.²
3. Include contractual language in tenant lease agreements that requires all TRUs entering the project-site be plug-in capable.
4. Include contractual language in tenant lease agreements that requires future tenants to exclusively use zero-emission light and medium-duty delivery trucks and vans.
5. Include contractual language in tenant lease agreements requiring all TRUs, trucks, and cars entering the project site be zero-emission.
6. Include contractual language in tenant lease agreements that requires all service equipment (e.g., yard hostlers, yard equipment, forklifts, and pallet jacks) used within the project site to be zero-emission. This equipment is widely available.
7. Include contractual language in tenant lease agreements that requires all heavy-duty trucks entering or on the project site to be model year 2014 or later, expedite a transition to zero-emission vehicles, and be fully zero-emission beginning in 2030.
8. Include contractual language in tenant lease agreements that requires the tenant be in, and monitor compliance with, all current air quality regulations for on-road trucks

C-7
(cont)

2. CARB's technology assessment for transport refrigerators provides information on the current and projected development of TRUs, including current and anticipated costs. The assessment is available at: https://www.arb.ca.gov/msprog/tech/techreport/tru_07292015.pdf.

COMMENT LETTER E

including CARB's Heavy-Duty (Tractor-Trailer) Greenhouse Gas Regulation,³ Periodic Smoke Inspection Program (PSIP),⁴ and the Statewide Truck and Bus Regulation.⁵

9. Include contractual language in tenant lease agreements restricting trucks and support equipment from idling longer than five minutes while on site.
10. Include contractual language in tenant lease agreements that limits on-site TRU diesel engine runtime to no longer than 15 minutes. If no cold storage operations are planned, include contractual language and permit conditions that prohibit cold storage operations unless a health risk assessment is conducted, and the health impacts fully mitigated.
11. Include rooftop solar panels for each proposed warehouse to the extent feasible, with a capacity that matches the maximum allowed for distributed solar connections to the grid.
12. Including language in tenant lease agreements, requiring the installing of vegetative walls⁶ or other effective barriers that separate loading docks and people living or working nearby.

C-7
(cont)

3. In December 2008, CARB adopted a regulation to reduce greenhouse gas emissions by improving the fuel efficiency of heavy-duty tractors that pull 53-foot or longer box-type trailers. The regulation applies primarily to owners of 53-foot or longer box-type trailers, including both dry-van and refrigerated-van trailers, and owners of the heavy-duty tractors that pull them on California highways. CARB's Heavy-Duty (Tractor-Trailer) Greenhouse Gas Regulation is available at: <https://ww2.arb.ca.gov/our-work/programs/ttghg>.

4. The PSIP program requires that diesel and bus fleet owners conduct annual smoke opacity inspections of their vehicles and repair those with excessive smoke emissions to ensure compliance. CARB's PSIP program is available at: <https://www.arb.ca.gov/enf/hdvp/hdvp.htm>.

5. The regulation requires that newer heavier trucks and buses must meet particulate matter filter requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model-year engines or equivalent. CARB's Statewide Truck and Bus Regulation is available at: <https://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm>.

6. Effectiveness of Sound Wall-Vegetation Combination Barriers as Near-Roadway Pollutant Mitigation Strategies (2017) is available at: <https://ww2.arb.ca.gov/sites/default/files/classic/research/apr/past/13-306.pdf>.

Responses to Comment Letter C

California Air Resources Board June 24, 2021 (Late Comment)

- C-1 This comment accurately summarizes the Project and estimated trip generation. This comment does not raise any issues with the environmental analysis provided in the Draft EIR and thus no further response is required.
- C-2 This comment generally summarizes CARB's remarks about air quality impacts associated with construction and operation of the Project and does not include specific comments. CARB's specific comments are addressed in the responses below.
- C-3 This comment addresses the potential increased exposure to air pollution in disadvantaged communities. This comment does not specifically address the analysis of health risks to disadvantaged communities provided in Draft EIR Section 4.23, Air Quality. Specifically, the California Environmental Protection Agency's (CalEPA) California Communities Environmental Health Screening Tool (CalEnviroScreen), and CARB's Community Air Protection Program (CAPP) established by Assembly Bill (AB) 617, which are referenced by the commenter, are addressed in Draft EIR Section 4.2.1.B, State Regulations. Senate Bill (SB) 535, which targets disadvantaged communities in California for the investment of proceeds from the State's cap-and-trade program to improve public health, quality of life, and economic opportunity in California's most burdened communities is also discussed.

Potential impacts to disadvantaged communities are addressed under Threshold 2.3 in Draft EIR Section 4.2 (page 4.2-50 and 4.2-51). In summary, and as identified in the Draft EIR, based on review of CalEnviroScreen, CalEPA designates the Project site and its immediately surrounding areas as being part of a disadvantaged community for the purpose of SB 535. However, as identified by the commenter, the nearest residential receptors are approximately 5,370 feet from the Project site. For purposes of assessing potential health risks, the West Valley Detention Center is identified as the nearest sensitive land use to the Project site where an individual could remain for 24 hours; this receptor is east of the Project (approximately 364-feet from the closest building facade) and is a short-term County jail facility.

The Project entails the development of two high-cube warehouse buildings, which would bring jobs and other economic opportunities to the local area without State assistance. The environmental effects of the Project are fully evaluated in the Draft EIR. As discussed under Threshold 2.2 in Section 4.2, regional emissions associated with operation would be less than significant, and with the incorporation of mitigation, regional emissions associated with construction would also be less than significant. The Draft EIR provides a disclosure of localized impacts that may affect Rancho Cucamonga (a CalEPA-designated disadvantaged community). As indicated in the analysis presented under Threshold 2.3: the Project's localized construction and operational emissions would not exceed the SCAQMD localized significance thresholds (LST) thresholds; (2) based on the Project-specific mobile source health risk assessment (HRA), the Project would not result in significant health impacts due to diesel particulate matter (DPM) emissions; and (3) the Project would not cause or contribute to any CO "hot spots."

With respect to cumulative health risks, Draft EIR Section 4.2.5, Cumulative Impacts, discusses the SCAQMD direction on how to address cumulative impacts from air pollution, including cumulative impacts for toxic air contaminants (TACs). The SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin. As identified in the Draft EIR, Projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant. Because the Project would not result in cancer risk or health hazards exceeding the SCAQMD thresholds of significance of 10 in one million and 1.0, respectively, the Draft EIR concludes that that Project's TAC emissions would result in a less than significant impact. Consistent with SCAQMD report on how to address cumulative impacts from air pollution, since the Project does not exceed the applicable health risk thresholds and does not result in a significant impact on an individual basis, the Project would not be considered to be cumulatively significant and a less than significant cumulative health risk impact would occur.

The Draft EIR also identifies that the CAPP requires CARB's governing board (Board) to consider selecting communities for participation in the CAPP on an annual basis. Communities are selected for developing community air monitoring systems, emissions reduction programs, or both in order to improve air quality in their community. Over the first two years of the CAPP (2018 and 2019), the Board selected 13 communities where these focused actions are underway. The City of Rancho Cucamonga is not one of the selected communities, and to date has not been nominated to participate in the CAPP.

Therefore, as requested by CARB in this comment, the City has provided the necessary environmental analysis to demonstrate that the Project would not negatively impact neighboring disadvantaged communities.

- C-4 This comment acknowledges that the Draft EIR includes mitigation measure (MM) 2-1 to reduce the Project's significant construction-related air quality impact to a less than significant level and recommends that additional mitigation measures be incorporated to further reduce the Project's air pollutant emissions. CARB further provides a list of potential mitigation measures in Attachment A to its comment letter. CEQA does not require the lead agency to analyze every imaginable mitigation measure. *Santa Clarita Organization for Planning the Environment v. City of Santa Clarita* (2011) 197 Cal.App.4th 1042. Nevertheless, and notwithstanding the Project's less than significant air quality impacts, in response to this comment, the Project Applicant has voluntarily agreed to incorporate the following additional mitigation measures that have been determined to be feasible for the Project and would further reduce the Project's less than significant air quality impacts. Specifically, as identified below, MM 2-1 has been expanded to include additional construction-related mitigation requirements, and MM 2-2 includes operational requirements. The expanded and new mitigation requirements are included in Section 3.0, Draft EIR Clarifications and Revisions, of this Final EIR. The inclusion of these additional measures does not change any of the analysis or conclusions in the EIR. The remaining recommended measures are already addressed through existing requirements or Project design; would be accomplished through adherence to mandatory regulations; or are not under the purview of the City or private developers, rather implementation is the responsibility of state or federal agencies.

MM 2-1 Prior to grading permit and building permit issuance, the City of Rancho Cucamonga shall verify that the following applicable notes are included on the

grading plans and building plans. Project contractors shall be required to ensure compliance with these notes and permit periodic inspection of the construction-site by City of Rancho Cucamonga staff or its designee to confirm compliance. These notes also shall be specified in bid documents issued to prospective construction contractors.

- During construction activity, Project construction contractors shall ensure that off-road diesel construction equipment complies with applicable California Air Resources Board (CARB) emissions standards or equivalent and shall ensure that all construction equipment is tuned and maintained in accordance with the manufacturer's specifications.
- The following off-road construction equipment shall be CARB Tier III certified or better, by construction phase as shown:
 - Demolition/Crushing:
 - Boom Lift
 - Concrete/Industrial Saws
 - Crusher
 - Skid Steer
 - Utilities/Infrastructure:
 - Trencher
 - Building Construction:
 - Forklifts
 - Generator Sets
 - Welders
 - Paving:
 - Pavers
 - Paving Equipment
 - Rollers
 - Architectural Coating
 - Air Compressors
- The following off-road construction equipment shall be CARB Tier IV Final certified or better, by construction phase as shown:
 - Demolition/Crushing:
 - Breakers
 - Excavators
 - Generator Sets
 - Rubber Tired Dozers
 - Grading:
 - Crawler Tractors
 - Excavators
 - Graders
 - Rubber Tired Dozers

- Scrapers
 - Utilities/Infrastructure:
 - Excavators
 - Skip Loaders/Backhoes
 - Building Construction
 - Cranes
 - Crawler Tractors
 - Laser Screed
 - Scissor Loaders/Backhoes
 - Skip Loaders/Backhoes
- Idling of heavy construction equipment shall be restricted to two minutes and electrical hook ups shall be provided to support use of zero and near-zero construction equipment and tools whenever feasible.
- Off-road equipment with a power rating below 19 kilowatts (e.g., plate compactors, pressure washers) used during project construction shall be electric powered, provided that it is commercially available, which may be plug-in (electric) or battery powered.
- Heavy-duty trucks used for dirt and material hauling during construction shall meet the United States Environmental Protection Agency/California Air Resource Board truck engine standard for Model Year 2014 or later.

MM 2-2 The Project Applicant shall include the following operational requirements in the final building design or stipulate the operational requirements for building occupants, as appropriate:

Project Design

- Make truck dock positions EV-ready by installing conduits at truck dock positions for future accommodation of light-duty and/or heavy-duty electric trucks and charging stations.

Lease Agreement and Owner-Occupant Requirements

- Those loading docks used by trucks with transport refrigeration units (TRU) as determined by a cold storage tenant shall be equipped with electrical hookups (applicable to cold storage tenant lease agreements only).
- TRUs entering the Project site shall be plug-in capable (applicable to cold storage tenant lease agreements only).

- **On-site TRU diesel engine run time shall be no longer than 15 minutes (applicable to cold storage tenant lease agreements only).**
- **Service equipment (e.g., yard hostlers, yard equipment, forklifts, and pallet jacks) shall be powered by alternative fuels, electrical batteries or other alternative/non-diesel fuels (e.g., propane) that do not emit diesel particulate matter, and that are low or zero emission.**
- **Trucks and support equipment shall not idle longer than five minutes while on site.**

- C-5 This comment summarizes CARB's previous comments regarding impacts to disadvantaged communities and the need for additional measures to minimize diesel PM and NOx emissions, as well as GHG emissions. Refer to Responses to Comments C-3 and C-4 above, which address these issues.
- C-6 This comment provides conclusory statements regarding CARB's review of CEQA documents, and identifies CARB's focus on substantive comments due to staff and resource limitations. CARB also requests to be included on the distribution list for the Project's Draft EIR; however, it should be clarified that CARB's comment letter is on the Draft EIR for the Project. CARB will be included on any future notifications sent by the City regarding the Project.
- C-7 This comment includes the recommended mitigation measures for warehouse and distribution center projects mentioned in Response to Comment C-4 above; additional mitigation that have been incorporated into the Project are identified in Response to Comment C-4.

SECTION 3.0 DRAFT EIR CLARIFICATIONS AND REVISIONS

Any corrections to the Draft Environmental Impact Report (EIR) generated by the City of Rancho Cucamonga or in response to comments received are stated in this section of the Final EIR. The Draft EIR has not been modified and published in its entirety as a single document to reflect these EIR modifications.

The information included in these Draft EIR revisions do not constitute substantial new information that requires recirculation of the Draft EIR. Section 15088.5 of the CEQA Guidelines states in part:

- (a) A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification. As used in this section, the term “information” can include changes in the project or environmental setting as well as additional data or other information. New information added to an EIR is not “significant” unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project’s proponents have declined to implement. “Significant new information” requiring recirculation includes, for example, a disclosure showing that:
 - (1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
 - (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
 - (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project’s proponents decline to adopt it.
 - (4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.
- (b) Recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR.

The changes to the Draft EIR included in these modifications involve: an expanded mitigation measure to address construction-related air pollutant emissions, specifically to further reduce NOx emissions, which were already mitigated to a less than significant level in the Draft EIR; a new mitigation measure to further reduce the Project’s already less than significant operational emissions; clarification that proposed operational characteristics related to the restrictions on the amount of proposed refrigerated space and lack of natural gas usage are included as Conditions of Approval; a correction to the construction assumptions identified in the Project Description to be consistent with the Air Quality technical report, which does not affect the Draft EIR’s air quality conclusions; and, revisions to a table in the Air Quality section to correct air pollutant emission

estimates which do not affect the Draft EIR's air quality conclusions. These modifications, which expand previous mitigation requirements to further reduce NOx emissions, clarify information already provided, or make insignificant modifications or corrections to the Draft EIR do not constitute "significant" new information and serve to further reduce impacts already identified in the Draft EIR as less than significant, either before or after mitigation. These changes therefore do not require recirculation of the Draft EIR because:

- No new significant environmental impacts would result from the project or from a new mitigation measure.
- There is no substantial increase in the severity of an environmental impact that would result unless mitigation measures are adopted that reduce the identified significant impacts to a level of insignificance.
- No feasible project alternative or mitigation measure considerably different from others previously analyzed has been proposed or identified that would clearly lessen the significant environmental impacts of the project.
- The Draft EIR is not fundamentally or basically inadequate or conclusory in nature such that meaningful public review and comment were precluded.

The EIR modifications contained in the following pages are in the same order as the information appears in the Draft EIR. Changes in text are signified by strikeouts (~~strikeouts~~) where text has been removed and by bold underline (**underline**) where text has been added. The applicable page numbers from the Draft EIR are also provided where necessary for easy reference.

Section 1 – Executive Summary

1. Page 1-11, Table 1-1, Summary of Environmental Impacts for the Project – Mitigation measure (MM) 2-1 is hereby revised as follows, and new MM 2-2 is added:

MM 2-1 Prior to grading permit and building permit issuance, the City of Rancho Cucamonga shall verify that the following applicable notes are included on the grading plans and building plans. Project contractors shall be required to ensure compliance with these notes and permit periodic inspection of the construction-site by City of Rancho Cucamonga staff or its designee to confirm compliance. These notes also shall be specified in bid documents issued to prospective construction contractors.

- During construction activity, Project construction contractors shall ensure that off-road diesel construction equipment complies with applicable California Air Resources Board (CARB) emissions standards or equivalent and shall ensure that all construction equipment is tuned and maintained in accordance with the manufacturer's specifications.
- The following off-road construction equipment shall be CARB Tier III certified or better, by construction phase as shown:
 - Demolition/Crushing:
 - Boom Lift
 - Concrete/Industrial Saws
 - Crusher

- Skid Steer
 - Utilities/Infrastructure:
 - Trencher
 - Building Construction:
 - Forklifts
 - Generator Sets
 - Welders
 - Paving:
 - Pavers
 - Paving Equipment
 - Rollers
 - Architectural Coating
 - Air Compressors
- The following off-road construction equipment shall be CARB Tier IV Final certified or better, by construction phase as shown:
 - Demolition/Crushing:
 - Breakers
 - Excavators
 - Generator Sets
 - Rubber Tired Dozers
 - Grading:
 - Crawler Tractors
 - Excavators
 - Graders
 - Rubber Tired Dozers
 - Scrapers
 - Utilities/Infrastructure:
 - Excavators
 - Skip Loaders/Backhoes
 - Building Construction
 - Cranes
 - Crawler Tractors
 - Laser Screed
 - Scissor Loaders/Backhoes
 - Skip Loaders/Backhoes
- **Idling of heavy construction equipment shall be restricted to two minutes and electrical hook ups shall be provided to support use of zero and near-zero construction equipment and tools whenever feasible.**

- Off-road equipment with a power rating below 19 kilowatts (e.g., plate compactors, pressure washers) used during project construction shall be electric powered, provided that it is commercially available, which may be plug-in (electric) or battery powered.
- Heavy-duty trucks used for dirt and material hauling during construction shall meet the United States Environmental Protection Agency/California Air Resource Board truck engine standard for Model Year 2014 or later.

MM 2-2 The Project Applicant shall include the following operational requirements in the final building design or stipulate the operational requirements for building occupants, as appropriate:

Project Design

- Make truck dock positions EV-ready by installing conduits at truck dock positions for future accommodation of light-duty and/or heavy-duty electric trucks and charging stations.

Lease Agreement or Owner-Occupant Requirements

- Those loading docks used by trucks with transport refrigeration units (TRU) as determined by a cold storage tenant shall be equipped with electrical hookups (applicable to cold storage tenant lease agreements only).
- TRUs entering the Project site shall be plug-in capable (applicable to cold storage tenant lease agreements only).
- On-site TRU diesel engine run time shall be no longer than 15 minutes (applicable to cold storage tenant lease agreements only).
- Service equipment (e.g., yard hostlers, yard equipment, forklifts, and pallet jacks) shall be powered by alternative fuels, electrical batteries or other alternative/non-diesel fuels (e.g., propane) that do not emit diesel particulate matter, and that are low or zero emission.
- Trucks and support equipment shall not idle longer than five minutes while on site.

Section 3.0 – Project Description

1. Page 3-9, 1st partial paragraph – the text is hereby revised to clarify the operational restriction related to cold storage will be a Condition of Approval. This is not a new mitigation measure and is not associated with a new significant impact.

“...However, for purposes of analysis in this Draft EIR, and based on the proposed building design/site plan and associated parking layout, it is assumed that 90% of the building square footage would be operated as a high-cube non-sort fulfillment center warehouse⁶⁸ and the remaining 10% would be operated as a high-cube cold storage warehouse⁶⁹. **A Condition of Approval will be included for the Project limiting any cold storage to a maximum 10% of building square footage.**”

2. Page 3-32 of the Draft EIR, 3rd paragraph under “Dry Utilities” – the text is hereby revised to clarify the operational restriction related to natural gas use will be a Condition of Approval. This is not a new mitigation measure and is not associated with a new significant impact.

“...However, natural gas service to the Project is not required and the Project does not include the installation of natural gas lines. Connections to existing gas lines in 4th Street and 6th Street could be made in the future if a tenant requires natural gas for operations **subject to additional review pursuant to CEQA. This requirement will be included as a Condition of Approval for the Project.**”

3. Page 3-38, 1st sentence, 2nd paragraph – this text is hereby corrected to reflect the construction equipment assumptions that were the basis of analysis in the Draft EIR:

“For purposes of analysis in this Draft EIR, construction equipment is expected to operate on the Project site approximately eight hours per day, ~~six~~ **five** days per week (~~Monday through Saturday~~).”

Section 4.2 – Air Quality

1. Page 4.2-35, Table 4.2-13, Summary of Peak Operational Emission – This table is hereby revised as follows to correct emissions estimates consistent with Table 3-11 of the Air Quality Impact Analysis included in Appendix B1 of the Draft EIR:

⁶⁸ Fulfillment centers can be categorized as either sort or non-sort facilities. A non-sort fulfillment center typically ships large box items that use more automation than manual sortation. A sort fulfillment center typically ships out smaller items, requiring extensive sorting, typically by manual means. (Institute of Transportation Engineers Trip Rate 155).

⁶⁹ A cold storage warehouse has the ability to keep temperature sensitive items in a temperature-controlled environment.

Table 4.2-13 Summary of Peak Operational Emissions

| | Emissions (lbs/day) | | | | | |
|--|----------------------------------|------------------------------------|------------------------------------|---------------------------------|----------------------------------|----------------------------------|
| | VOC | NOx | CO | SOx | PM10 | PM2.5 |
| Summer | | | | | | |
| TRUs | 0.26 <u>1.03</u> | 0.26 <u>8.79</u> | 0.26 <u>11.44</u> | 0.26 <u>0</u> | 0.26 <u>0.21</u> | 0.26 <u>0.19</u> |
| Total Maximum Daily Emissions | 63.18 <u>63.96</u> | 133.14 <u>141.67</u> | 179.52 <u>190.71</u> | 1.19 <u>0.94</u> | 64.48 <u>64.44</u> | 18.64 <u>18.58</u> |
| <i>Existing Emissions</i> | 47.97 | 153.26 | 160.24 | 0.95 | 51.03 | 16.22 |
| Net Emissions (Project – Existing) ^a | 15.21 <u>15.99</u> | -20.12 <u>-11.59</u> | 19.28 <u>30.47</u> | 0.25 <u>-0.01</u> | 13.46 <u>13.41</u> | 2.42 <u>2.35</u> |
| SCAQMD Regional Threshold | 55 | 55 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | NO | NO | NO | NO | NO | NO |
| Winter | | | | | | |
| TRUs | 0.26 <u>1.03</u> | 0.26 <u>8.79</u> | 0.26 <u>11.44</u> | 0.26 <u>0</u> | 0.26 <u>0.21</u> | 0.26 <u>0.19</u> |
| Total Maximum Daily Emissions | 62.29 <u>63.07</u> | 136.48 <u>145.01</u> | 147.71 <u>158.89</u> | 1.16 <u>0.90</u> | 64.41 <u>64.36</u> | 18.61 <u>18.55</u> |
| <i>Existing Emissions</i> | 47.16 | 156.39 | 136.44 | 0.92 | 50.95 | 16.20 |
| Net Emissions (Project – Existing) ^a | 15.14 <u>15.91</u> | -19.91 <u>-11.38</u> | 11.26 <u>22.45</u> | 0.24 <u>-0.02</u> | 13.46 <u>13.41</u> | 2.42 <u>2.35</u> |
| SCAQMD Regional Threshold | 55 | 55 | 550 | 150 | 150 | 55 |
| Threshold Exceeded? | NO | NO | NO | NO | NO | NO |

2. Page 4.2-53 – Mitigation measure (MM) 2-1 is hereby revised as follows, and new MM 2-2 is added:

MM 2-1

Prior to grading permit and building permit issuance, the City of Rancho Cucamonga shall verify that the following applicable notes are included on the grading plans and building plans. Project contractors shall be required to ensure compliance with these notes and permit periodic inspection of the construction-site by City of Rancho Cucamonga staff or its designee to confirm compliance. These notes also shall be specified in bid documents issued to prospective construction contractors.

- During construction activity, Project construction contractors shall ensure that off-road diesel construction equipment complies with applicable California Air Resources Board (CARB) emissions standards or

equivalent and shall ensure that all construction equipment is tuned and maintained in accordance with the manufacturer's specifications.

- The following off-road construction equipment shall be CARB Tier III certified or better, by construction phase as shown:
 - Demolition/Crushing:
 - Boom Lift
 - Concrete/Industrial Saws
 - Crusher
 - Skid Steer
 - Utilities/Infrastructure:
 - Trencher
 - Building Construction:
 - Forklifts
 - Generator Sets
 - Welders
 - Paving:
 - Pavers
 - Paving Equipment
 - Rollers
 - Architectural Coating
 - Air Compressors
- The following off-road construction equipment shall be CARB Tier IV Final certified or better, by construction phase as shown:
 - Demolition/Crushing:
 - Breakers
 - Excavators
 - Generator Sets
 - Rubber Tired Dozers
 - Grading:
 - Crawler Tractors
 - Excavators
 - Graders
 - Rubber Tired Dozers
 - Scrapers
 - Utilities/Infrastructure:
 - Excavators
 - Skip Loaders/Backhoes
 - Building Construction
 - Cranes
 - Crawler Tractors
 - Laser Screed
 - Scissor Loaders/Backhoes

- Skip Loaders/Backhoes

- Idling of heavy construction equipment shall be restricted to two minutes and electrical hook ups shall be provided to support use of zero and near-zero construction equipment and tools whenever feasible.
- Off-road equipment with a power rating below 19 kilowatts (e.g., plate compactors, pressure washers) used during project construction shall be electric powered, provided that it is commercially available, which may be plug-in (electric) or battery powered.
- Heavy-duty trucks used for dirt and material hauling during construction shall meet the United States Environmental Protection Agency/California Air Resource Board truck engine standard for Model Year 2014 or later.

MM 2-2 The Project Applicant shall include the following operational requirements in the final building design or stipulate the operational requirements for building occupants, as appropriate:

Project Design

- Make truck dock positions EV-ready by installing conduits at truck dock positions for future accommodation of light-duty and/or heavy-duty electric trucks and charging stations.

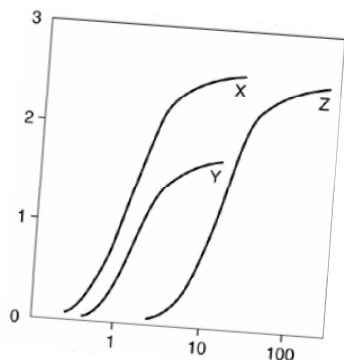
Lease Agreement or Owner-Occupant Requirements

- Those loading docks used by trucks with transport refrigeration units (TRU) as determined by a cold storage tenant shall be equipped with electrical hookups (applicable to cold storage tenant lease agreements only).
- TRUs entering the Project site shall be plug-in capable (applicable to cold storage tenant lease agreements only).
- On-site TRU diesel engine run time shall be no longer than 15 minutes (applicable to cold storage tenant lease agreements only).
- Service equipment (e.g., yard hostlers, yard equipment, forklifts, and pallet jacks) shall be powered by alternative fuels, electrical batteries or other alternative/non-diesel fuels (e.g., propane) that do not emit diesel particulate matter, and that are low or zero emission.
- Trucks and support equipment shall not idle longer than five minutes while on site.

ATTACHMENT A

**ATTACHMENTS TO COMMENT LETTER A
ADAMS BROADWELL JOSEPH AND CARDOZO**

EXHIBIT A



Clark & Associates
Environmental Consulting, Inc

OFFICE

12405 Venice Blvd.
Suite 331
Los Angeles, CA 90066

PHONE

310-907-6165

FAX

310-398-7626

EMAIL

jclark.assoc@gmail.com

James J. J. Clark, Ph.D.

Principal Toxicologist

Toxicology/Exposure Assessment Modeling

Risk Assessment/Analysis/Dispersion Modeling

Education:

Ph.D., Environmental Health Science, University of California, 1995

M.S., Environmental Health Science, University of California, 1993

B.S., Biophysical and Biochemical Sciences, University of Houston, 1987

Professional Experience:

Dr. Clark is a well recognized toxicologist, air modeler, and health scientist. He has 20 years of experience in researching the effects of environmental contaminants on human health including environmental fate and transport modeling (SCREEN3, AEROMOD, ISCST3, Johnson-Ettinger Vapor Intrusion Modeling); exposure assessment modeling (partitioning of contaminants in the environment as well as PBPK modeling); conducting and managing human health risk assessments for regulatory compliance and risk-based clean-up levels; and toxicological and medical literature research.

Significant projects performed by Dr. Clark include the following:

LITIGATION SUPPORT

Case: James Harold Caygle, et al, v. Drummond Company, Inc. Circuit Court for the Tenth Judicial Circuit, Jefferson County, Alabama. Civil Action. CV-2009

Client: Environmental Litigation Group, Birmingham, Alabama

Dr. Clark performed an air quality assessment of emissions from a coke factory located in Tarrant, Alabama. The assessment reviewed include a comprehensive review of air quality standards, measured concentrations of pollutants from factory, an inspection of the facility and detailed assessment of the impacts on the community. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Rose Roper V. Nissan North America, et al. Superior Court of the State Of California for the County Of Los Angeles – Central Civil West. Civil Action. NC041739

Client: Rose, Klein, Marias, LLP, Long Beach, California

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to multiple chemicals, including benzene, who later developed a respiratory distress. A review of the individual's medical and occupational history was performed to prepare an exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to respiratory irritants. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: O'Neil V. Sherwin Williams, et al. United States District Court Central District of California

Client: Rose, Klein, Marias, LLP, Long Beach, California

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to petroleum distillates who later developed a bladder cancer. A review of the individual's medical and occupational history was performed to prepare a quantitative exposure assessment. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Summary judgment for defendants.

Case: Moore V., Shell Oil Company, et al. Superior Court of the State Of California for the County Of Los Angeles

Client: Rose, Klein, Marias, LLP, Long Beach, California

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to chemicals while benzene who later developed a leukogenic disease. A review of the individual's medical and occupational history was performed to prepare a quantitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to refined petroleum hydrocarbons. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Raymond Saltonstall V. Fuller O'Brien, KILZ, and Zinsser, et al. United States District Court Central District of California

Client: Rose, Klein, Marias, LLP, Long Beach, California

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to benzene who later developed a leukogenic disease. A review of the individual's medical and occupational history was performed to prepare a quantitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to refined petroleum hydrocarbons. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Richard Boyer and Elizabeth Boyer, husband and wife, V. DESCO Corporation, et al. Circuit Court of Brooke County, West Virginia. Civil Action Number 04-C-7G.

Client: Frankovitch, Anetaklis, Colantonio & Simon, Morgantown, West Virginia.

Dr. Clark performed a toxicological assessment of a family exposed to chlorinated solvents released from the defendant's facility into local drinking water supplies. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to chlorinated solvents. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: JoAnne R. Cook, V. DESCO Corporation, et al. Circuit Court of Brooke County, West Virginia. Civil Action Number 04-C-9R

Client: Frankovitch, Anetakis, Colantonio & Simon, Morgantown, West Virginia.

Dr. Clark performed a toxicological assessment of an individual exposed to chlorinated solvents released from the defendant's facility into local drinking water supplies. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to chlorinated solvents. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Patrick Allen And Susan Allen, husband and wife, and Andrew Allen, a minor, V. DESCO Corporation, et al. Circuit Court of Brooke County, West Virginia. Civil Action Number 04-C-W

Client: Frankovitch, Anetakis, Colantonio & Simon, Morgantown, West Virginia.

Dr. Clark performed a toxicological assessment of a family exposed to chlorinated solvents released from the defendant's facility into local drinking water supplies. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to chlorinated solvents. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Michael Fahey, Susan Fahey V. Atlantic Richfield Company, et al. United States District Court Central District of California Civil Action Number CV-06 7109 JCL.

Client: Rose, Klein, Marias, LLP, Long Beach, California

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to refined petroleum hydrocarbons who later developed a leukogenic disease. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to refined petroleum hydrocarbons. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Constance Acevedo, et al., V. California Spray-Chemical Company, et al., Superior Court of the State Of California, County Of Santa Cruz. Case No. CV 146344

Dr. Clark performed a comprehensive exposure assessment of community members exposed to toxic metals from a former lead arsenate manufacturing facility. The former manufacturing site had undergone a DTSC mandated removal action/remediation for the presence of the toxic metals at the site. Opinions were presented regarding the elevated levels of arsenic and lead (in attic dust and soils) found throughout the community and the potential for harm to the plaintiffs in question.

Case Result: Settlement in favor of defendant.

Case: Michael Nawrocki V. The Coastal Corporation, Kurk Fuel Company, Pautler Oil Service, State of New York Supreme Court, County of Erie, Index Number I2001-11247

Client: Richard G. Berger Attorney At Law, Buffalo, New York

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to refined petroleum hydrocarbons who later developed a leukogenic disease. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the

known outcomes in published literature to exposure to refined petroleum hydrocarbons. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Judgement in favor of defendant.

SELECTED AIR MODELING RESEARCH/PROJECTS

Client – Confidential

Dr. Clark performed a comprehensive evaluation of criteria pollutants, air toxins, and particulate matter emissions from a carbon black production facility to determine the impacts on the surrounding communities. The results of the dispersion model will be used to estimate acute and chronic exposure concentrations to multiple contaminants and will be incorporated into a comprehensive risk evaluation.

Client – Confidential

Dr. Clark performed a comprehensive evaluation of air toxins and particulate matter emissions from a railroad tie manufacturing facility to determine the impacts on the surrounding communities. The results of the dispersion model have been used to estimate acute and chronic exposure concentrations to multiple contaminants and have been incorporated into a comprehensive risk evaluation.

Client – Los Angeles Alliance for a New Economy (LAANE), Los Angeles, California

Dr. Clark is advising the LAANE on air quality issues related to current flight operations at the Los Angeles International Airport (LAX) operated by the Los Angeles World Airport (LAWA) Authority. He is working with the LAANE and LAX staff to develop a comprehensive strategy for meeting local community concerns over emissions from flight operations and to engage federal agencies on the issue of local impacts of community airports.

Client – City of Santa Monica, Santa Monica, California

Dr. Clark is advising the City of Santa Monica on air quality issues related to current flight operations at the facility. He is working with the City staff to develop a comprehensive strategy for meeting local community concerns over emissions from flight operations and to engage federal agencies on the issue of local impacts of community airports.

Client: Omnitrans, San Bernardino, California

Dr. Clark managed a public health survey of three communities near transit fueling facilities in San Bernardino and Montclair California in compliance with California Senate Bill 1927. The survey included an epidemiological survey of the effected communities, emission surveys of local businesses, dispersion modeling to determine potential emission concentrations within the communities, and a comprehensive risk assessment of each community. The results of the study were presented to the Governor as mandated by Senate Bill 1927.

Client: Confidential, San Francisco, California

Summarized cancer types associated with exposure to metals and smoking. Researched the specific types of cancers associated with exposure to metals and smoking. Provided causation analysis of the association between cancer types and exposure for use by non-public health professionals.

Client: Confidential, Minneapolis, Minnesota

Prepared human health risk assessment of workers exposed to VOCs from neighboring petroleum storage/transport facility. Reviewed the systems in place for distribution of petroleum hydrocarbons to identify chemicals of concern (COCs), prepared comprehensive toxicological summaries of COCs, and quantified potential risks from carcinogens and non-carcinogens to receptors at or adjacent to site. This evaluation was used in the support of litigation.

Client – United Kingdom Environmental Agency

Dr. Clark is part of team that performed comprehensive evaluation of soil vapor intrusion of VOCs from former landfill adjacent residences for the United Kingdom's Environment

Agency. The evaluation included collection of liquid and soil vapor samples at site, modeling of vapor migration using the Johnson Ettinger Vapor Intrusion model, and calculation of site-specific health based vapor thresholds for chlorinated solvents, aromatic hydrocarbons, and semi-volatile organic compounds. The evaluation also included a detailed evaluation of the use, chemical characteristics, fate and transport, and toxicology of chemicals of concern (COC). The results of the evaluation have been used as a briefing tool for public health professionals.

EMERGING/PERSISTENT CONTAMINANT RESEARCH/PROJECTS

Client: Ameren Services, St. Louis, Missouri

Managed the preparation of a comprehensive human health risk assessment of workers and residents at or near an NPL site in Missouri. The former operations at the Property included the servicing and repair of electrical transformers, which resulted in soils and groundwater beneath the Property and adjacent land becoming impacted with PCB and chlorinated solvent compounds. The results were submitted to U.S. EPA for evaluation and will be used in the final ROD.

Client: City of Santa Clarita, Santa Clarita, California

Dr. Clark is managing the oversight of the characterization, remediation and development activities of a former 1,000 acre munitions manufacturing facility for the City of Santa Clarita. The site is impacted with a number of contaminants including perchlorate, unexploded ordinance, and volatile organic compounds (VOCs). The site is currently under a number of regulatory consent orders, including an Imminent and Substantial Endangerment Order. Dr. Clark is assisting the impacted municipality with the development of remediation strategies, interaction with the responsible parties and stakeholders, as well as interfacing with the regulatory agency responsible for oversight of the site cleanup.

Client: Confidential, Los Angeles, California

Prepared comprehensive evaluation of perchlorate in environment. Dr. Clark evaluated the production, use, chemical characteristics, fate and transport, toxicology, and remediation of perchlorate. Perchlorates form the basis of solid rocket fuels and have recently been detected in water supplies in the United States. The results of this research

were presented to the USEPA, National GroundWater, and ultimately published in a recent book entitled *Perchlorate in the Environment*.

Client – Confidential, Los Angeles, California

Dr. Clark is performing a comprehensive review of the potential for pharmaceuticals and their by-products to impact groundwater and surface water supplies. This evaluation will include a review if available data on the history of pharmaceutical production in the United States; the chemical characteristics of various pharmaceuticals; environmental fate and transport; uptake by xenobiotics; the potential effects of pharmaceuticals on water treatment systems; and the potential threat to public health. The results of the evaluation may be used as a briefing tool for non-public health professionals.

PUBLIC HEALTH/TOXICOLOGY

Client: Brayton Purcell, Novato, California

Dr. Clark performed a toxicological assessment of residents exposed to methyl-tertiary butyl ether (MTBE) from leaking underground storage tanks (LUSTs) adjacent to the subject property. The symptomology of residents and guests of the subject property were evaluated against the known outcomes in published literature to exposure to MTBE. The study found that residents had been exposed to MTBE in their drinking water; that concentrations of MTBE detected at the site were above regulatory guidelines; and, that the symptoms and outcomes expressed by residents and guests were consistent with symptoms and outcomes documented in published literature.

Client: Confidential, San Francisco, California

Identified and analyzed fifty years of epidemiological literature on workplace exposures to heavy metals. This research resulted in a summary of the types of cancer and non-cancer diseases associated with occupational exposure to chromium as well as the mortality and morbidity rates.

Client: Confidential, San Francisco, California

Summarized major public health research in United States. Identified major public health research efforts within United States over last twenty years. Results were used as a briefing tool for non-public health professionals.

Client: Confidential, San Francisco, California

Quantified the potential multi-pathway dose received by humans from a pesticide applied indoors. Part of team that developed exposure model and evaluated exposure concentrations in a comprehensive report on the plausible range of doses received by a specific person. This evaluation was used in the support of litigation.

Client: Covanta Energy, Westwood, California

Evaluated health risk from metals in biosolids applied as soil amendment on agricultural lands. The biosolids were created at a forest waste cogeneration facility using 96% whole tree wood chips and 4 percent green waste. Mass loading calculations were used to estimate Cr(VI) concentrations in agricultural soils based on a maximum loading rate of 40 tons of biomass per acre of agricultural soil. The results of the study were used by the Regulatory agency to determine that the application of biosolids did not constitute a health risk to workers applying the biosolids or to residences near the agricultural lands.

Client – United Kingdom Environmental Agency

Oversaw a comprehensive toxicological evaluation of methyl-*tertiary* butyl ether (MtBE) for the United Kingdom's Environment Agency. The evaluation included available data on the production, use, chemical characteristics, fate and transport, toxicology, and remediation of MtBE. The results of the evaluation have been used as a briefing tool for public health professionals.

Client – Confidential, Los Angeles, California

Prepared comprehensive evaluation of *tertiary* butyl alcohol (TBA) in municipal drinking water system. TBA is the primary breakdown product of MtBE, and is suspected to be the primary cause of MtBE toxicity. This evaluation will include available information on the production, use, chemical characteristics, fate and transport in the environment, absorption, distribution, routes of detoxification, metabolites, carcinogenic potential, and remediation of TBA. The results of the evaluation were used as a briefing tool for non-public health professionals.

Client – Confidential, Los Angeles, California

Prepared comprehensive evaluation of methyl *tertiary* butyl ether (MTBE) in municipal drinking water system. MTBE is a chemical added to gasoline to increase the octane

rating and to meet Federally mandated emission criteria. The evaluation included available data on the production, use, chemical characteristics, fate and transport, toxicology, and remediation of MTBE. The results of the evaluation have been used as a briefing tool for non-public health professionals.

Client – Ministry of Environment, Lands & Parks, British Columbia

Dr. Clark assisted in the development of water quality guidelines for methyl tertiary-butyl ether (MTBE) to protect water uses in British Columbia (BC). The water uses to be considered includes freshwater and marine life, wildlife, industrial, and agricultural (e.g., irrigation and livestock watering) water uses. Guidelines from other jurisdictions for the protection of drinking water, recreation and aesthetics were to be identified.

Client: Confidential, Los Angeles, California

Prepared physiologically based pharmacokinetic (PBPK) assessment of lead risk of receptors at middle school built over former industrial facility. This evaluation is being used to determine cleanup goals and will be basis for regulatory closure of site.

Client: Kaiser Venture Incorporated, Fontana, California

Prepared PBPK assessment of lead risk of receptors at a 1,100-acre former steel mill. This evaluation was used as the basis for granting closure of the site by lead regulatory agency.

RISK ASSESSMENTS/REMEDIAL INVESTIGATIONS

Client: Confidential, Atlanta, Georgia

Researched potential exposure and health risks to community members potentially exposed to creosote, polycyclic aromatic hydrocarbons, pentachlorophenol, and dioxin compounds used at a former wood treatment facility. Prepared a comprehensive toxicological summary of the chemicals of concern, including the chemical characteristics, absorption, distribution, and carcinogenic potential. Prepared risk characterization of the carcinogenic and non-carcinogenic chemicals based on the exposure assessment to quantify the potential risk to members of the surrounding community. This evaluation was used to help settle class-action tort.

Client: Confidential, Escondido, California

Prepared comprehensive Preliminary Endangerment Assessment (PEA) of dense non-aqueous liquid phase hydrocarbon (chlorinated solvents) contamination at a former printed circuit board manufacturing facility. This evaluation was used for litigation support and may be used as the basis for reaching closure of the site with the lead regulatory agency.

Client: Confidential, San Francisco, California

Summarized epidemiological evidence for connective tissue and autoimmune diseases for product liability litigation. Identified epidemiological research efforts on the health effects of medical prostheses. This research was used in a meta-analysis of the health effects and as a briefing tool for non-public health professionals.

Client: Confidential, Bogotá, Columbia

Prepared comprehensive evaluation of the potential health risks associated with the redevelopment of a 13.7 hectares plastic manufacturing facility in Bogotá, Colombia. The risk assessment was used as the basis for the remedial goals and closure of the site.

Client: Confidential, Los Angeles, California

Prepared comprehensive human health risk assessment of students, staff, and residents potentially exposed to heavy metals (principally cadmium) and VOCs from soil and soil vapor at 12-acre former crude oilfield and municipal landfill. The site is currently used as a middle school housing approximately 3,000 children. The evaluation determined that the site was safe for the current and future uses and was used as the basis for regulatory closure of site.

Client: Confidential, Los Angeles, California

Managed remedial investigation (RI) of heavy metals and volatile organic chemicals (VOCs) for a 15-acre former manufacturing facility. The RI investigation of the site included over 800 different sampling locations and the collection of soil, soil gas, and groundwater samples. The site is currently used as a year round school housing approximately 3,000 children. The Remedial Investigation was performed in a manner

that did not interrupt school activities and met the time restrictions placed on the project by the overseeing regulatory agency. The RI Report identified the off-site source of metals that impacted groundwater beneath the site and the sources of VOCs in soil gas and groundwater. The RI included a numerical model of vapor intrusion into the buildings at the site from the vadose zone to determine exposure concentrations and an air dispersion model of VOCs from the proposed soil vapor treatment system. The Feasibility Study for the Site is currently being drafted and may be used as the basis for granting closure of the site by DTSC.

Client: Confidential, Los Angeles, California

Prepared comprehensive human health risk assessment of students, staff, and residents potentially exposed to heavy metals (principally lead), VOCs, SVOCs, and PCBs from soil, soil vapor, and groundwater at 15-acre former manufacturing facility. The site is currently used as a year round school housing approximately 3,000 children. The evaluation determined that the site was safe for the current and future uses and will be basis for regulatory closure of site.

Client: Confidential, Los Angeles, California

Prepared comprehensive evaluation of VOC vapor intrusion into classrooms of middle school that was former 15-acre industrial facility. Using the Johnson-Ettinger Vapor Intrusion model, the evaluation determined acceptable soil gas concentrations at the site that did not pose health threat to students, staff, and residents. This evaluation is being used to determine cleanup goals and will be basis for regulatory closure of site.

Client –Dominguez Energy, Carson, California

Prepared comprehensive evaluation of the potential health risks associated with the redevelopment of 6-acre portion of a 500-acre oil and natural gas production facility in Carson, California. The risk assessment was used as the basis for closure of the site.

Kaiser Ventures Incorporated, Fontana, California

Prepared health risk assessment of semi-volatile organic chemicals and metals for a fifty-year old wastewater treatment facility used at a 1,100-acre former steel mill. This evaluation was used as the basis for granting closure of the site by lead regulatory agency.

ANR Freight - Los Angeles, California

Prepared a comprehensive Preliminary Endangerment Assessment (PEA) of petroleum hydrocarbon and metal contamination of a former freight depot. This evaluation was as the basis for reaching closure of the site with lead regulatory agency.

Kaiser Ventures Incorporated, Fontana, California

Prepared comprehensive health risk assessment of semi-volatile organic chemicals and metals for 23-acre parcel of a 1,100-acre former steel mill. The health risk assessment was used to determine clean up goals and as the basis for granting closure of the site by lead regulatory agency. Air dispersion modeling using ISCST3 was performed to determine downwind exposure point concentrations at sensitive receptors within a 1 kilometer radius of the site. The results of the health risk assessment were presented at a public meeting sponsored by the Department of Toxic Substances Control (DTSC) in the community potentially affected by the site.

Unocal Corporation - Los Angeles, California

Prepared comprehensive assessment of petroleum hydrocarbons and metals for a former petroleum service station located next to sensitive population center (elementary school). The assessment used a probabilistic approach to estimate risks to the community and was used as the basis for granting closure of the site by lead regulatory agency.

Client: Confidential, Los Angeles, California

Managed oversight of remedial investigation most contaminated heavy metal site in California. Lead concentrations in soil excess of 68,000,000 parts per billion (ppb) have been measured at the site. This State Superfund Site was a former hard chrome plating operation that operated for approximately 40-years.

Client: Confidential, San Francisco, California

Coordinator of regional monitoring program to determine background concentrations of metals in air. Acted as liaison with SCAQMD and CARB to perform co-location sampling and comparison of accepted regulatory method with ASTM methodology.

Client: Confidential, San Francisco, California

Analyzed historical air monitoring data for South Coast Air Basin in Southern California and potential health risks related to ambient concentrations of carcinogenic metals and volatile organic compounds. Identified and reviewed the available literature and calculated risks from toxins in South Coast Air Basin.

IT Corporation, North Carolina

Prepared comprehensive evaluation of potential exposure of workers to air-borne VOCs at hazardous waste storage facility under SUPERFUND cleanup decree. Assessment used in developing health based clean-up levels.

Professional Associations

American Public Health Association (APHA)

Association for Environmental Health and Sciences (AEHS)

American Chemical Society (ACS)

California Redevelopment Association (CRA)

International Society of Environmental Forensics (ISEF)

Society of Environmental Toxicology and Chemistry (SETAC)

Publications and Presentations:**Books and Book Chapters**

Sullivan, P., **J.J. J. Clark**, F.J. Agardy, and P.E. Rosenfeld. (2007). *Synthetic Toxins In The Food, Water and Air of American Cities*. Elsevier, Inc. Burlington, MA.

Sullivan, P. and **J.J. J. Clark**. 2006. *Choosing Safer Foods, A Guide To Minimizing Synthetic Chemicals In Your Diet*. Elsevier, Inc. Burlington, MA.

Sullivan, P., Agardy, F.J., and **J.J.J. Clark**. 2005. *The Environmental Science of Drinking Water*. Elsevier, Inc. Burlington, MA.

Sullivan, P.J., Agardy, F.J., **Clark, J.J.J.** 2002. *America's Threatened Drinking Water: Hazards and Solutions*. Trafford Publishing, Victoria B.C.

Clark, J.J.J. 2001. "TBA: Chemical Properties, Production & Use, Fate and Transport, Toxicology, Detection in Groundwater, and Regulatory Standards" in *Oxygenates in the Environment*. Art Diaz, Ed.. Oxford University Press: New York.

Clark, J.J.J. 2000. "Toxicology of Perchlorate" in *Perchlorate in the Environment*. Edward Urbansky, Ed. Kluwer/Plenum: New York.

Clark, J.J.J. 1995. Probabilistic Forecasting of Volatile Organic Compound Concentrations At The Soil Surface From Contaminated Groundwater. UMI.

Baker, J.; **Clark, J.J.J.**; Stanford, J.T. 1994. Ex Situ Remediation of Diesel Contaminated Railroad Sand by Soil Washing. Principles and Practices for Diesel Contaminated Soils, Volume III. P.T. Kostecki, E.J. Calabrese, and C.P.L. Barkan, eds. Amherst Scientific Publishers, Amherst, MA. pp 89-96.

Journal and Proceeding Articles

- 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, Volume 70 (2008) page 002254.
- 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, Volume 70 (2008) page 000527
- Hensley A.R., Scott, A., Rosenfeld P.E., **Clark, J.J.J.** (2007). "Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility." *Environmental Research*. 105:194-199.
- Rosenfeld, P.E., **Clark, J. J.**, Hensley, A.R., and Suffet, I.H. 2007. "The Use Of An Odor Wheel Classification For The Evaluation of Human Health Risk Criteria For Compost Facilities" *Water Science & Technology*. 55(5): 345-357.
- Hensley A.R., Scott, A., Rosenfeld P.E., **Clark, J.J.J.** 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, August 21 – 25, 2006. Radisson SAS Scandinavia Hotel in Oslo Norway.
- Rosenfeld, P.E., **Clark, J. J.** and Suffet, I.H. 2005. "The Value Of An Odor Quality Classification Scheme For Compost Facility Evaluations" The U.S. Composting Council's 13th Annual Conference January 23 - 26, 2005, Crowne Plaza Riverwalk, San Antonio, TX.
- Rosenfeld, P.E., **Clark, J. J.** and Suffet, I.H. 2004. "The Value Of An Odor Quality Classification Scheme For Urban Odor" WEFTEC 2004. 77th Annual Technical Exhibition & Conference October 2 - 6, 2004, Ernest N. Morial Convention Center, New Orleans, Louisiana.
- Clark, J.J.J.** 2003. "Manufacturing, Use, Regulation, and Occurrence of a Known Endocrine Disrupting Chemical (EDC), 2,4-Dichlorophenoxyacetic Acid (2,4-D) in California Drinking Water Supplies." National Groundwater Association Southwest Focus Conference: Water Supply and Emerging Contaminants. Minneapolis, MN. March 20, 2003.

- Rosenfeld, P. and **J.J.J. Clark**. 2003. "Understanding Historical Use, Chemical Properties, Toxicity, and Regulatory Guidance" National Groundwater Association Southwest Focus Conference: Water Supply and Emerging Contaminants. Phoenix, AZ. February 21, 2003.
- Clark, J.J.J.**, Brown A. 1999. Perchlorate Contamination: Fate in the Environment and Treatment Options. In Situ and On-Site Bioremediation, Fifth International Symposium. San Diego, CA, April, 1999.
- Clark, J.J.J.** 1998. Health Effects of Perchlorate and the New Reference Dose (RfD). Proceedings From the Groundwater Resource Association Seventh Annual Meeting, Walnut Creek, CA, October 23, 1998.
- Browne, T., **Clark, J.J.J.** 1998. Treatment Options For Perchlorate In Drinking Water. Proceedings From the Groundwater Resource Association Seventh Annual Meeting, Walnut Creek, CA, October 23, 1998.
- Clark, J.J.J.**, Brown, A., Rodriguez, R. 1998. The Public Health Implications of MtBE and Perchlorate in Water: Risk Management Decisions for Water Purveyors. Proceedings of the National Ground Water Association, Anaheim, CA, June 3-4, 1998.
- Clark J.J.J.**, Brown, A., Ulrey, A. 1997. Impacts of Perchlorate On Drinking Water In The Western United States. U.S. EPA Symposium on Biological and Chemical Reduction of Chlorate and Perchlorate, Cincinnati, OH, December 5, 1997.
- Clark, J.J.J.**; Corbett, G.E.; Kerger, B.D.; Finley, B.L.; Paustenbach, D.J. 1996. Dermal Uptake of Hexavalent Chromium In Human Volunteers: Measures of Systemic Uptake From Immersion in Water At 22 PPM. *Toxicologist*. 30(1):14.
- Dodge, D.G.; **Clark, J.J.J.**; Kerger, B.D.; Richter, R.O.; Finley, B.L.; Paustenbach, D.J. 1996. Assessment of Airborne Hexavalent Chromium In The Home Following Use of Contaminated Tapwater. *Toxicologist*. 30(1):117-118.
- Paulo, M.T.; Gong, H., Jr.; **Clark, J.J.J.** (1992). Effects of Pretreatment with Ipratropium Bromide in COPD Patients Exposed to Ozone. *American Review of Respiratory Disease*. 145(4):A96.
- Harber, P.H.; Gong, H., Jr.; Lachenbruch, A.; **Clark, J.**; Hsu, P. (1992). Respiratory Pattern Effect of Acute Sulfur Dioxide Exposure in Asthmatics. *American Review of Respiratory Disease*. 145(4):A88.
- McManus, M.S.; Gong, H., Jr.; Clements, P.; **Clark, J.J.J.** (1991). Respiratory Response of Patients With Interstitial Lung Disease To Inhaled Ozone. *American Review of Respiratory Disease*. 143(4):A91.
- Gong, H., Jr.; Simmons, M.S.; McManus, M.S.; Tashkin, D.P.; Clark, V.A.; Detels, R.; **Clark, J.J.** (1990). Relationship Between Responses to Chronic Oxidant and Acute

Ozone Exposures in Residents of Los Angeles County. American Review of Respiratory Disease. 141(4):A70.

Tierney, D.F. and **J.J.J. Clark.** (1990). Lung Polyamine Content Can Be Increased By Spermidine Infusions Into Hyperoxic Rats. American Review of Respiratory Disease. 139(4):A41.



South Coast Air Quality Management District

21865 E. Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 • <http://www.aqmd.gov>

Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis

August 2003

Introduction

In 1998, following an exhaustive 10-year scientific assessment process, the State of California Air Resources Board (ARB) identified particulate matter from diesel-fueled engines as a toxic air contaminant.¹ Subsequent to this determination, the South Coast Air Quality Management District (SCAQMD) initiated a comprehensive urban toxic air pollution study, called MATES-II (for Multiple Air Toxics Exposure Study).² MATES-II showed that average cancer risk in the South Coast Air Basin (Basin) ranges from 1,100 in a million to 1,750 in a million, with an average regional risk of about 1,400 in a million. More over, diesel particulate matter (DPM) accounts for more than 70 percent of the cancer risk.

Over the last several years, areas in the eastern portion of the Basin have undergone significant land-use transformation. Agriculture land has been converted into truck stops and warehouse distribution centers. The air pollution impacts from such development are dominated by the carcinogenic risk of the DPM emissions. The Governing Board Mobile Source Committee directed the AQMD staff to assess the health risks from truck stops and warehouse distribution centers. Based on this analysis, a prior version of this document (dated December 2002) was prepared to provide technical guidance to interested parties (i.e., our recommended procedures for preparing CEQA documents for applicable projects with mobile source diesel emissions). Later, staff also developed technical guidance for addressing potential DPM impacts from the following activities: truck idling and movement, ship hotelling and train idling. This document which constitutes the technical guidance report was reviewed by the Mobile Source Committee of the Board.

It should be noted that CARB staff intends to issue statewide technical guidance for diesel toxic impact analyses for various source categories. Until such time, this document will serve as an interim technical guidance for estimating potential DPM impacts from the following activities:

- Truck idling and movement (such as, but not limited to, truck stops, warehouse/distribution centers or transit centers),
- Ship hotelling at ports, and
- Train idling.

AQMD staff is also available to work with project proponents to address unique project-specific applications.

The remainder of the document provides guidance on the following components of a typical DPM risk analysis: project description, project emissions, dispersion modeling, estimation of health risks, and lastly, potential mitigation measures.

Project Description

The modeling analysis should contain a brief description of the facility and its activities. Table 1 lists the information on the facility and its surroundings that must be provided in the modeling analysis. The facility location is used to determine the most representative

meteorological data for the analysis. The nearby land use and topography information is needed to choose the appropriate model and its options (e.g., urban versus rural, simple terrain versus complex terrain) and to determine applicable exposure adjustments (e.g. residential or worker exposure). It should be noted that it is SCAQMD procedure to assume an urban setting for facilities in the Basin. Justification should be provided if the rural classification is used.

Table 1. Required Source Information.

| |
|---|
| <p><u>Information on the Facility and Its Surroundings</u></p> <ul style="list-style-type: none"> ■ Location (i.e., address) ■ Local land use (within 20 km) ■ Local topography (within 20 km) ■ Facility plot plan <ul style="list-style-type: none"> • Property line • Horizontal scale • Building height (for building downwash calculations if necessary) • Source locations ■ Operating schedule (i.e., hours/day, days/week, weeks/year) <p><u>Point Source Information (i.e., Stationary Sources Associated with the Project)</u></p> <ul style="list-style-type: none"> ■ Hourly emission rate ■ Annual emissions ■ Stack location on plot plan (UTM coordinates) ■ Stack height ■ Stack diameter ■ Stack gas exit velocity ■ Stack gas exit temperature ■ Building dimensions and location if applicable <p><u>Fugitive Source or Mobile Source Information</u></p> <ul style="list-style-type: none"> ■ Hourly emission rate ■ Annual emissions ■ Source location on plot plan (UTM coordinates) ■ Source height ■ Area or volume dimension |
|---|

The facility plot plan (including a length scale) is needed to determine the source location, building dimensions, and the property boundary or right-of-way boundary. The operating schedule (i.e., hours/day, days/week, weeks/year, etc.), the hourly DPM

emission rate, the annual DPM emissions, and the source parameters listed in the Table 1 are necessary to accurately characterize the source emission rate for modeling. One should keep in mind that the more information provided on the facility operating schedule the more appropriately the facility can be modeled. The same applies to the characteristics of the source, such as the release height of the emissions.

Table 2. Information Necessary to Calculate Diesel Particulate Emissions from Truck Idling and Movement.

| |
|--|
| <p><u>Truck Traffic on Local Streets and/or Arterials</u></p> <ul style="list-style-type: none"> ■ Number of trucks visiting the facility per day ■ Composite DPM emission factor (in grams per mile) based on project year and average vehicle speed ■ Travel distance on the local streets and/or arterials (in miles) <p><u>On-Site Truck Movement</u></p> <ul style="list-style-type: none"> ■ Number of trucks visiting the facility per day ■ On-site travel distance (in miles) ■ Composite DPM emission factor (in grams per mile) based on project year and vehicle speed <p><u>On-Site Truck Idling</u></p> <ul style="list-style-type: none"> ■ Number of trucks visiting the facility per day ■ Average idling time per truck ■ Composite idling emission factor (grams per minute) based on project year <p><u>Transportation Refrigeration Units (TRUs)</u></p> <ul style="list-style-type: none"> ■ Number of TRUs operating per hour ■ Operating time per hour (in minutes per hour) ■ TRU emission factor (in grams per minute) based on horsepower rating and load factor <p><u>Auxiliary Power Units (APUs)</u></p> <ul style="list-style-type: none"> ■ Number of APUs operating per hour ■ Operating time per hour (in minutes per hour) ■ APU emission factor (in grams per minute) based on horsepower rating and load factor |
|--|

Project Emissions

Truck Idling and Movement

Emissions of diesel particulates can occur from the following activities associated with diesel trucks:

- Truck traffic on local streets and arterials in transit to or from the facility (i.e., truck stop, warehouse/distribution center or transit center),
- Truck idling and movement on-site at the facility (i.e., truck stop, warehouse/distribution center or transit center), and
- Operation of Transportation Refrigeration Units (TRUs) at the facility (i.e., truck stop, warehouse/distribution center or transit center).

Table 2 summarizes the information required to estimate DPM emissions from the facility. The latest version of EMFAC³ should be used to estimate the composite DPM emission factor for truck movement on local streets and truck movement and idling on the proposed facility property. EMFAC is ARB's computer model to estimate past, present, and future on-road emissions of HC, CO, NO_x, PM, lead, SO₂, and CO₂. Make sure EMFAC is run for a calendar year and county/air basin representative of the proposed project. From the output, select the DPM emission factor for the vehicle class and speed pertinent to the proposed project.

DPM emission factors for transportation refrigeration units (TRUs) can be obtained from an appendix in ARB's risk reduction plan for diesel particulate emissions.⁴

Ship Hotelling at Local Ports

Emissions of DPM from ships are mainly concentrated in the San Pedro Bay Ports (SPBP) which includes the Port of Los Angeles and the Port of Long Beach. Ships that contribute to DPM emissions in the SPBP are oceangoing vessels, tugboats, fishing vessels, U.S. Navy vessels, U.S. Coast Guard vessels, and other harbor vessels such as work boats, pilot boats, and passenger cruise boats. Most DPM emissions, however, are generated by oceangoing vessels. DPM emissions vary depending on a ship's mode of activity. Ships are on cruise mode when they enter or leave the South Coast waters which are approximately 100 miles from the coastline. While in Port, ships are either on "hotelling and berthing" mode or on maneuvering mode when ships move from one berth to another. The ships' power requirements during hotelling or berthing are supplied by continuously operating its diesel-fueled auxiliary engines and boilers. The latest update on DPM emissions in the SPBP can be found in the report entitled, *Marine Vessels Emissions Inventory Update to 1996 Report: Marine Vessel Emissions Inventory and Control Strategies*.⁵

Table 3. Information Necessary to Calculate Diesel Particulate Emissions from Ship Hotelling at Local Ports.

| |
|---|
| <u>Hotelling Operations</u> |
| ■ Number of ships |
| ■ Average hotelling hours for each ship type |
| ■ Auxiliary power engine emission factor for particulate matter, lbs/hr |

Table 3 summarizes the information required to estimate DPM emissions from the shipping activities in the local ports.

Train Idling

Emissions of diesel particulate matter from train idling occurs predominantly at railroad yards, train stations, and train stops. Most train idling emissions are concentrated at railroad yards, where switching engines and local yard service operations are performed. Train idling averages from 6 to 10 hours per train per day. Due to difficulty in cold starting and possible costly damage to the locomotive's diesel-powered engine, train idling has been a common practice in the rail industry for decades.

There are four railroad companies that serve the Basin. The companies are Amtrak, Metrolink, Santa Fe, and Union Pacific. Amtrak and Metrolink operate passenger trains solely for interstate/cross-country and local transportation, respectively. Train idling emissions are generated during stops made at each train station. Santa Fe and Union Pacific offer freight, yard, and local services. Idling emissions from these trains are emitted in several major railroad yards locations, namely:

- Los Angeles - Taylor Yard
- Los Angeles – 750 Lamar St.
- Los Angeles – 8th and Santa Fe
- Long Beach – Anaheim and Sampson
- Long Beach – 2401 E. Sepulveda
- Watson – West of Long Beach
- City of Commerce – Indiana and Washington
- City of Commerce – Washington and Oak
- City of Industry – 650 S. Stimson
- West Colton – 19100 Slover Ave.
- San Bernardino – 4th and 15 Freeway
- Riverside 3rd and Vine St.

Table 4. Information Necessary to Calculate Diesel Particulate Emissions from Train Idling.

| |
|---|
| <p><u>Train Operations Data</u></p> <ul style="list-style-type: none">■ number of trains idling per location■ frequency of trains idling per location■ average idle time per day per locomotive per location, hr/day <p><u>Locomotive Engine and Fuel Data</u></p> <ul style="list-style-type: none">■ locomotive horsepower rating, hp■ fuel consumption while idling, gal/hr |
|---|

- fuel density, lb/gal
- brake specific fuel consumption, lb/hp-hr
- DPM emission factor, g/hp-hr

For the latest emissions data on locomotives in the SCAB, refer to the report entitled, *Emissions from Locomotives in the Modeling Region for the South Coast Air Quality Management District*.⁶ Emission factors for locomotives, can be found from the U.S. EPA's report titled, *Technical Highlights- Emission Factors for Locomotives*.⁷

Table 4 summarizes the information required to estimate DPM emissions from train idling.

Dispersion Modeling

Model Selection

The latest version of U.S. Environmental Protection Agency (U.S. EPA) air quality dispersion model, called ISCST3 (Industrial Source Complex – Short Term, Version 3)⁸ should be used for estimating the impacts. ISCST3 is a Gaussian plume model capable of estimating pollutant concentrations from a wide variety of sources that are typically present in an industrial source complex. Emission sources are categorized into four basic types: point, area, volume, and open pit sources. ISCST3 estimates hourly concentrations for each source/receptor pair and calculates concentrations for user-specified averaging times, including an average concentration for the complete simulation period.

ISCST3 should be executed using the urban dispersion parameters (i.e., URBAN control option), which is SCAQMD policy for all permitting in its jurisdiction. The U.S. EPA regulatory defaults options are implemented except that the calm processing option is disabled (i.e., NOCALM control option).

Source Treatment

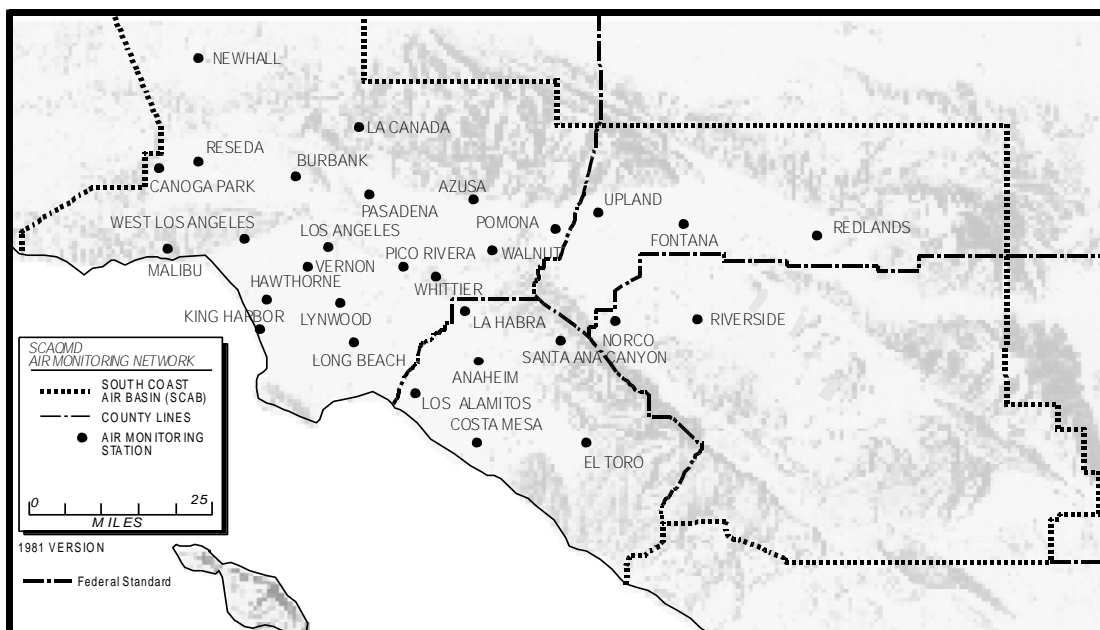
The volume or area source options of ISCST3 are most appropriate for the DPM sources associated with truck idling and movement. Multiple, adjacent volume (or area) sources could be used to simulate a roadway. The reader is referred to the ISCST3 user's guide for guidance in this area.⁸ Individuals preparing impact assessments are referred to ARB for guidance regarding source parameters and source activity assumptions.⁵ Significant deviations from the assumptions outlined in *Appendix VII: Risk Characterization Scenarios* should be justified.

The point source treatment of ISCST3 is most appropriate for ship activity and train idling emissions. Multiple, adjacent point sources could be used to simulate ship maneuvering within local ports and train movement within railroad yards.

Meteorological Data

District has 1981 meteorological data (i.e., hourly winds, atmospheric stability, and mixing heights) at 35 stations in the Basin, as shown in Figure 1 and listed in Table 5. These data are in a format which can be directly read by ISCST3. The nearest representative meteorological station should be chosen for modeling. Usually this is simply the nearest station; however, an intervening terrain feature may dictate the use of an alternate station. Individuals may contact District staff regarding the most representative meteorological station if necessary. The data are available on the SCAQMD's website.⁹

Figure 1. Meteorological Monitoring Stations in the South Coast Air Basin



Receptor Grid

The receptor grid should begin at the facility fence line or transportation right-of-way and extend to an adequate distance from the site to cover the facility's impact area. The peak annual DPM concentrations should be identified using 100-meter receptor grid. A map showing the emission sources and the receptor grid with actual coordinates used in the modeling should be provided. Discrete receptors should also be located at sensitive receptors (e.g., schools, day-care centers, hospitals, etc.) in the impact area (i.e., the area where impacts are greater than 1 in a million).

Table 5. Locations of Meteorological Stations.

| Station name | UTM Coordinates (m) | | Lat./Long. Coordinates | |
|----------------------|---------------------|--------|------------------------|------------|
| | E-W | N-S | Latitude | Longitude |
| Anaheim | 415.0 | 3742.5 | 33°49'16" | 117°55'07" |
| Azusa | 414.9 | 3777.4 | 34°08'09" | 117°55'23" |
| Banning | 510.5 | 3754.5 | 33°55'58" | 116°53'11" |
| Burbank | 379.5 | 3783.0 | 34°10'58" | 118°18'27" |
| Canoga Park | 352.9 | 3786.0 | 34°12'23" | 118°35'48" |
| Compton | 385.5 | 3750.3 | 33°53'19" | 118°14'17" |
| Costa Mesa | 413.8 | 3724.2 | 33°39'21" | 117°55'47" |
| Downtown Los Angeles | 386.9 | 3770.1 | 34°04'02" | 118°13'31" |
| El Toro | 436.0 | 3720.9 | 33°37'39" | 117°41'25" |
| Fontana | 455.4 | 3773.9 | 34°06'24" | 117°29'01" |
| Indio | 572.3 | 3731.0 | 33°43'06" | 116°13'11" |
| King Harbor | 371.2 | 3744.4 | 33°50'00" | 118°23'30" |
| La Canada | 388.2 | 3786.1 | 34°12'42" | 118°12'49" |
| La Habra | 412.0 | 3754.0 | 33°55'28" | 117°57'07" |
| Lancaster | 396.0 | 3839.5 | 34°41'38" | 118°08'08" |
| Lennox | 373.0 | 3755.0 | 33°55'46" | 118°22'26" |
| Long Beach | 390.0 | 3743.0 | 33°49'24" | 118°11'19" |
| Los Alamitos | 404.5 | 3739.8 | 33°47'45" | 118°01'54" |
| Lynwood | 388.0 | 3754.0 | 33°55'20" | 118°12'42" |
| Malibu | 344.0 | 3766.9 | 34°01'59" | 118°41'23" |
| Newhall | 355.5 | 3805.5 | 34°22'59" | 118°31'02" |
| Norco | 446.8 | 3749.0 | 33°52'54" | 117°34'31" |
| Palm Springs | 542.5 | 3742.5 | 33°49'25" | 116°32'27" |
| Pasadena | 396.0 | 3778.5 | 34°08'38" | 118°07'41" |
| Pico Rivera | 402.3 | 3764.1 | 34°00'53" | 118°03'29" |
| Pomona | 430.8 | 3769.6 | 34°03'60" | 117°44'60" |
| Redlands | 486.2 | 3769.4 | 34°04'00" | 117°09'00" |
| Reseda | 359.0 | 3785.0 | 34°11'54" | 118°31'49" |
| Riverside | 464.8 | 3758.6 | 33°58'10" | 117°22'50" |
| Santa Ana Canyon | 431.0 | 3748.4 | 33°52'32" | 117°44'46" |
| Upland | 440.0 | 3773.1 | 34°05'55" | 117°39'02" |
| Vernon | 387.4 | 3762.5 | 33°59'55" | 118°13'10" |
| Walnut | 420.0 | 3761.7 | 33°59'41" | 117°51'58" |
| West Los Angeles | 372.3 | 3768.6 | 34°03'08" | 118°23'01" |
| Whittier | 405.3 | 3754.0 | 33°55'26" | 118°01'28" |

Estimation of Health Risks

Cancer Risks

The cancer risks from DPM occur exclusively through the inhalation pathway; therefore the cancer risks can be estimated from the following equation:

$$CR_{DPM} = C_{DPM} \cdot URF_{DPM} \cdot LEA$$

where,

| | |
|--------------------|--|
| CR _{DPM} | Cancer risk from diesel particulate matter; the probability of an individual developing cancer as a result of exposure to DPM. |
| C _{DPM} | Annual average DPM concentration in µg/m ³ . |
| URF _{DPM} | Unit risk factor for DPM; estimated probability that a person will contract cancer as a result of inhalation of a DPM concentration of 1 µg/m ³ continuously over a period of 70 years. |
| LEA | Lifetime exposure adjustment; values range from 0.14 to 1.0; see the discussion below. |

The inhalation unit risk factor for diesel particulate was established by ARB as 300 in one million per continuous exposure of 1 µg/m³ of DPM over a 70-year period.¹ The latest unit risk factors should always be used in the impact assessment (see reference #10 for a link to the latest toxicity values.)

In order to protect public health, and in accordance with the recommendations of the State of California Office of Environmental Health Hazard Assessment (OEHHA), a 70-year lifetime exposure is assumed for all receptor locations except for off-site workers (i.e., receptor locations in commercial or industrial areas). The LEA for all residential or sensitive receptors is 1.0.

It is recognized that exposures for off-site workers in commercial or industrial areas are less than 70 years. Exposure adjustments for these off-site workers are allowed as follows. When the facility and its equipment operate continuously (i.e., 24 hrs/day and 365 days/yr), the LEA for an off-site worker is 0.14 (i.e., [8 hr/day • 240 days/yr • 46 yrs]/[24 hrs/day • 365 days/yr • 70 yrs]). For all other facility operating schedules, the LEA for an off-site worker is 0.66 (i.e., 46 yr/70 yr).

A cancer risk isopleth map showing risk contours of 1, 10, and 25 in a million should be included in the impact assessment.

Non-cancer Risks

The relationship for the non-cancer health effects of DPM is given by the following equation:

$$HI_{DPM} = C_{DPM}/REL_{DPM}$$

where,

| | |
|--------------------|---|
| HI _{DPM} | Hazard Index; an expression of the potential for non-cancer health effects. |
| C _{DPM} | Annual average DPM concentration (µg/m ³). |
| REL _{DPM} | Reference exposure level (REL) for DPM; the DPM concentration at which no adverse health effects are anticipated. |

The chronic REL for DPM was established by OEHHA as 5 µg/m³. The latest RELs should always be used in the impact assessment (see reference #10 for a link to the latest toxicity values.)

Potential Mitigation Measures

CEQA requires public agencies to take responsibility for protecting the environment. In regulating public or private projects, agencies are expected to avoid or minimize environmental damage. The purpose of an EIR is to identify the significant effects of a project on the environment, identify alternatives to the project, and indicate the manner in which significant impacts can be mitigated or avoided. To this end, below is a list of potentially applicable mitigation measures for truck idling facilities, shipping activities in local ports, and train idling.

Truck Idling Facilities

- Provide a minimum buffer zone of 300 meters between truck traffic and sensitive receptors;
- Re-route truck traffic by adding direct off-ramps for the truck traffic or by restricting truck traffic on certain sensitive routes;
- Improve traffic flow by signal synchronization;
- Enforce truck parking restrictions;
- Develop park and ride programs;
- Restrict truck idling;
- Restrict operation to “clean” trucks;
- Electrify service equipment at facility;
- Provide electrical hook-ups for trucks that need to cool their load;
- Electrify auxiliary power units;
- Use “clean” street sweepers;
- Pave roads and road shoulders;
- Provide onsite services to minimize truck traffic in or near residential areas, including, but not limited to, the following services: meal or cafeteria service, automated teller machines, etc;
- Require or provide incentives to use low-sulfur diesel fuel with particulate traps; and
- Conduct air quality monitoring at sensitive receptors.

Ship Hotelling at Local Ports

- Require the use of land-based power when berthed;

- Limit the sulfur content of fuel used by ships in the South Coast waters; and
- Install add-on DPM control device to diesel-fueled auxiliary engines and boilers.

Train Idling

- Change Railroad Operating Practices - Reducing idle time would definitely reduce DPM emissions. Locomotives that are not in use generally idle. Locomotive manufacturers indicate that engines could be shut-down and restarted when ambient temperatures are above 50°F, which is nearly always the case in southern California.
- Idle Reduction Technologies - The rail industry has developed and designed a new Auxiliary Power Unit (APU) system that provides power during idling conditions and shuts down the main locomotive engine. Installing APU system reduces locomotive PM emissions by 84 percent. Significant reduction in diesel fuel consumption also results when the main locomotive engine is shuts down automatically by the APU system.
- Research and Development of New Engine Technologies - Modifying fuel injectors which includes fuel injection pressure, fuel spray pattern, injection rate and timing has been found to reduce emissions from locomotive diesel engines. Development of low NO_x locomotive engine is based on similar principle used in low NO_x engines for stationary power industry. Retardation of fuel injection can achieve significant NO_x emission reductions.

References

- (1) Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant. ARB and OEHHA. April 22, 1998.
- (2) Final Report on MATES-II. SCAQMD. March 2000.
- (3) Refer to the following link to ARB's website for the latest version of EMFAC and its documentation: http://www.arb.ca.gov/msei/on-road/onroad_index.htm.
- (4) Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. Appendix VII – Risk Characterization Scenarios. ARB. October 2000.
- (5) Marine Vessels Emissions Inventory Update to 1996 Report: Marine Vessel Emissions Inventory and Control Strategies. Prepared for the South Coast A.Q.M.D by Charlotte Pera and Diana Popek of ARCADIS Geraghty and Miller, Inc., Mountain View, California. September 23, 1999.
- (6) Emissions from Locomotives in the Modeling Region for the South Coast Air Quality Management District. Final Technical Report III-H, Air Quality Management Plan 1991 Revision. Prepared by Booz-Allen & Hamilton Inc. July 1990.

- (7) Technical Highlights - Emission Factors for Locomotives. EPA420-F-97-051. December 1997. Refer to the following link:
<http://www.epa.gov/otaq/regs/nonroad/locomotv/frm/42097051.pdf>
- (8) Refer to the following links to U.S. EPA's website for the latest version of ISCST3 and its documentation: <http://www.epa.gov/scram001/tt22.htm#isc>.
- (9) Refer to the following link to SCAQMD's website to obtain meteorological data for dispersion modeling: <http://www.aqmd.gov/metdata/>.
- (10) Refer to the following link to ARB's website for the latest toxicity values: <http://www.arb.ca.gov/toxics/healthval/healthval.htm>.

ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF ENFORCEMENT

VISIBLE EMISSION OBSERVATIONS
KAISER STEEL CORPORATION
Fontana, California
September 1975

May 1976

NATIONAL ENFORCEMENT INVESTIGATIONS CENTER - Denver, Colorado
and
REGION IX - San Francisco, California

CONTENTS

| | | |
|------|--|----|
| I. | INTRODUCTION | 1 |
| II. | SUMMARY AND CONCLUSIONS | 3 |
| | Visible Emission Observations | 3 |
| | Compliance with Consent Order | 5 |
| III. | APPLICABLE REGULATIONS | 8 |
| | Visible Emissions | 8 |
| | Emergency Variances | 9 |
| IV. | VISIBLE EMISSION OBSERVATIONS | 11 |
| | Study Methods. | 11 |
| | Environmental Data | 13 |
| | Facility Description | 15 |
| | Blast Furnaces | 19 |
| | Sintering Plant | 24 |
| | Coke Oven Batteries | 25 |
| | Open Hearth Furnaces | 35 |
| | Basic Oxygen Steel Process Furnaces | 38 |
| | Rolling Mill Soaking Pits | 49 |
| | Hot Strip Mill | 50 |
| | Scrap Cutting | 51 |
| V. | ANALYSIS OF THE STATUS OF COMPLIANCE WITH CONSENT ORDER | 54 |
| | Appendix A Requirements | 55 |
| | " B " | 56 |
| | " C " | 58 |
| | " D " | 59 |
| | " E " | 61 |
| | " F " | 62 |
| | Discussion | 62 |
| | APPENDIX - VEO RECORD | 65 |

TABLES

| | | |
|-------|--|----|
| II-1 | Emissions Exceeding Applicable Regulations - Summary | 4 |
| IV-1 | Sources of Visible Emissions | 12 |
| IV-2 | Meteorological Data from Kaiser Steel | 14 |
| IV-3 | Stack Characteristics | 17 |
| IV-4 | VEO's at Blast Furnace Process Area | 23 |
| IV-5 | VEO's at Open Hearth Furnace Area | 29 |
| IV-6 | VEO's at Coke Battery Sources. | 31 |
| IV-7 | VEO'S at Open Hearth Furnace Area | 39 |
| IV-8 | VEO's at BOSP Furnaces | 43 |
| IV-9 | VEO's at Rolling Mill Soaking Pits | 50 |
| IV-10 | VEO's at Scrap Cutting Areas | 53 |

FIGURES

| | | |
|-------|--|----|
| IV-1 | Kaiser Steel Plant Vicinity Map | 16 |
| IV-2 | Schematic of Stack Orientation | 18 |
| IV-3 | Blast Furnace Process Flow | 20 |
| IV-4 | Coke Oven Process Flow | 26 |
| IV-5 | Observed Coke Oven Leaks | 32 |
| IV-6 | Open Hearth Furnace Process Flow | 36 |
| IV-7 | BOSP Furnace Process Flow | 41 |
| IV-8 | Smoke Density, Stack 23, 20 Sept. | 45 |
| IV-9 | Smoke Density, Stack 23, 21 Sept. | 46 |
| IV-10 | Smoke Density, Stack 21, 20 Sept. | 47 |
| IV-11 | Smoke Density, Stack 21, 21 Sept. | 48 |

I. INTRODUCTION

Kaiser Steel Corporation operates a steel mill at Fontana, California, about 80 km (50 mi) east of Los Angeles. The facility is a fully integrated steel mill with basic coke, iron and steel production processes and a full range of finishing operations. It is the only integrated mill in California. The basic coke, iron and steel processes result in the emission to the atmosphere of excessive levels of particulate air pollutants, despite the installation of various air pollution control devices.

On 11 July 1974, the Corporation entered into a Consent Order with EPA-Region IX to control these emissions. The Order specified various steps to be taken by the Corporation, including process modifications and installation of air pollution control devices. A compliance schedule for both interim and final compliance dates was also established. The Order was amended 11 November 1974, changing several interim dates but not affecting the final compliance dates.

Subsequent to the amendment, the Corporation on 24 July 1975 submitted a \$150 million Steelmaking Modernization Project Proposal to EPA. The proposal included significant changes from the schedule in the Consent Order. Among these were extended compliance dates, with the final EPA compliance date of 31 December 1977 advanced to 30 June 1981. To date no EPA action has occurred on this proposal.

At the request of the Enforcement Director, EPA-Region IX, San Francisco, California, the National Enforcement Investigations Center (NEIC) conducted a study of the Kaiser facility in September 1975. The objectives of the study were to determine the status of

compliance with the Consent Order and to observe sources of visible emissions to determine compliance with applicable County regulations. The field portion of the study was conducted 16-24 September 1975.

This report presents the results of the study. Applicable visible emission regulations are presented in Section III. A discussion of the results of the visible emission observations is contained in Section IV. The status of compliance with the Consent Order is evaluated in Section V.

II. SUMMARY AND CONCLUSIONS

A survey of Kaiser Steel Corporation's integrated steel mill at Fontana, California was conducted 16-24 September 1975. The survey was to determine the status of compliance with applicable visible emission regulations and with an abatement schedule of the Kaiser-EPA Consent Order.

VISIBLE EMISSION OBSERVATIONS

Observations were made of all major sources of visible emissions in the blast furnaces, sinter plant, coke oven batteries, open hearth furnaces, basic oxygen steel process (BOSP) furnaces, rolling mill soaking pits, hot strip mill and scrap cutting areas. Visible emissions exceeding applicable regulations were observed at 29 stacks and numerous coke oven doors, standpipes and quench towers. These sources and the number of observations at each source are summarized in Table II-1.

Not all occasions were recorded during the study when emissions exceeded allowable limits. Excessive visible emissions were almost continuous from stack No. 6 serving coke oven Battery A, and from coke oven door leaks. Excessive emissions also occurred from scrap cutting operations while in progress.

Charging procedures at the coke oven batteries had recently been changed from sequential to staged charging. Therefore, operations were not normal and observations of emissions from the charging cycle were deferred until a later date.

Table II-1
SUMMARY OF OBSERVATIONS OF VISIBLE EMISSIONS
EXCEEDING APPLICABLE REGULATIONS

| Process Area | Source | Observations Exceeding Limits |
|--------------------------------------|---|----------------------------------|
| Blast Furnaces | stack no. { 1 2 4 | 3 |
| | | 1 |
| | | 3 |
| | Cast House Roof | 1 |
| Sinter Plant | 5 | 1 |
| Coke Oven Batteries | stack no. { 6 7 8 9 10 11 | 10 |
| | | 8 |
| | | 3 |
| | | 8 |
| | | 6 |
| | | 6 |
| | Door Leaks | 29 |
| | Standpipes | 2 |
| | Quench Towers | 3 |
| Open Hearth Furnaces | stack no. { 12 13 16 20 | 8 |
| | | 5 |
| | | 1 |
| | | 8 |
| | Roof Monitors | 5 |
| Basic Oxygen Steel Process (BOSP) | stack no. { 21 23 | 7 |
| | | 2 |
| | ESP [†] Bypass | 3 |
| | Roof Monitors | 7 |
| Rolling Mills | stack no { 31 37 38 40 41 43 | 1 |
| | | 2 |
| | | 1 |
| | | 1 |
| | | 1 |
| | | 2 |
| Hot Strip Mill | 57 | 1 |
| Scrap Cutting | Main Area | 6 |
| | Near BOSP | 2 |
| Total | | 145 |

[†] *electrostatic precipitator*

COMPLIANCE WITH CONSENT ORDER

Compliance with the 11 July 1974 Consent Order to date has been minimal. This is best illustrated summarizing Corporation progress under each Appendix to the Order.

Appendix A

Part A. An EPA contractor is studying control technology that may bring "A" Battery stack into compliance. An experimental unit is presently processing half the stack emission as part of the study.

Part B. The Corporation has requested an extension of up to 30 months for compliance with emissions from Battery stacks B through G.

Appendix B

Part A. The Corporation certified that pushing and charging at all batteries were in compliance with Rule 50A. •

Part B. The Corporation certified that coke oven doors and stand-pipes in Batteries C through G were in compliance with Rule 50A.

Part C. The Corporation has installed new doors on Batteries A and B but is not required to certify compliance until 31 December 1975.

Part D. No action required.

Part E. The final control plan to bring combined visible emissions from each coke oven into compliance was not submitted on 30 July 1975 as required.

Appendix C

Part A. The Corporation did not certify to compliance with Rule 50A. However, they did indicate meeting the necessary increment of progress for charging and tapping operations at furnaces No. 1 and 3 of the basic oxygen steel process (BOSP).

Part B. A 7-1/2 month extension was requested due to delivery problems with the baghouse.

Appendix D

On 17 January 1975 the Corporation was advised that they are in violation of the Order. The Corporation has not met a later date for installing additional control equipment at the open hearth furnaces but has proposed an alternative Steelmaking Modernization Program. This would extend the final compliance date on these units for 17 months.

Appendix E

The Corporation has indicated they will not erect a scrap cutting building with control equipment as required by the Order. They were advised of being in violation of the Consent Order on 15 May 1975. The Steel Modernization Program included installation of a ball drop facility and machine torch cutting devices on the outside as the alternative to an enclosure. These are in place but not in accordance with the Order.

Appendix F

The Steelmaking Modernization Plan suggests a 3-1/2 year extension for compliance with the desulphurization of coke oven gas.

Progress thus far has led to the following conclusions:

The Corporation has acted unilaterally in modifying elements of the Consent Order without consulting EPA. These modifications may or may not bring the particular operation into final compliance.

The Corporation has certified to compliance with various elements of the Consent Order that appear to be out of compliance.

Visible emission observations indicate that other facilities at the plant not covered by the Consent Order are exceeding Rule 50A.

Operations and Maintenance procedures which will play a major role in meeting clean air objectives do not seem to receive the priority necessary.

III. APPLICABLE REGULATIONS

Emissions of air pollutants from the Kaiser steel mill are subject to regulations promulgated for the San Bernardino County Air Pollution Control Zone, Southern California Air Pollution Control District. Specific regulations concerned with visible emissions and with upset or breakdown conditions are presented below.

In addition, emissions from the steel mill are the subject of a Consent Order entered into by EPA and the Kaiser Steel Corporation on 11 July 1974. The Order specifies various abatement measures to be implemented by the Corporation on a specific time schedule. The requirements of the Order and the Corporation's progress to date in complying with the Order are discussed in detail in Section V of this report.

VISIBLE EMISSIONS

Visible emissions are subject to the limitations specified in the following San Bernardino County regulation:

Rule 50A. Visible Emissions

A person shall not discharge into the atmosphere from any single source of emission whatsoever, any air contaminant for a period or periods aggregating more than three (3) minutes in any one (1) hour which is:

- a. As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or

- b. Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in Section (a) of this Rule.

This Rule is effective on 1 June 1972 for all sources which are not either in operation or under construction prior to that date, and Rule 50 shall not be applicable to such sources on or after that date. This Rule is to become effective for all other sources on 1 January 1975, and Rule 50 shall not be applicable on or after that date.

Variances from compliance with Rule 50A have been granted to Kaiser Steel Corporation for several of their Fontana operations by the San Bernardino County Hearing Board. These variances have not been approved by EPA. Operations excepted and compliance dates are as follows:

| | |
|-----------------------------------|--------------|
| Scrap Cutting | 31 May 1976 |
| Open Hearth Stacks | 31 July 1977 |
| Coke Oven Battery A Stack | 31 Dec. 1976 |
| Coke Oven Batteries B to G Stacks | 31 Dec. 1977 |

EMERGENCY VARIANCES

The regulations grant emergency variances for excessive emissions during upset or breakdown of control equipment under certain conditions.

Rule 55. Upset Conditions or Breakdowns

Emissions exceeding any of the limits established in this regulation as a direct result of upset conditions in or breakdown of any air pollution control equipment or related processing

equipment shall not be deemed to be in violation of the rules establishing such limits, provided the following requirements (a) and (b) of this section are met.

- a. Any upset condition or breakdown of equipment which causes a violation of the Rules and Regulations of the District or the Health and Safety Code of the State of California shall be reported to the office of the District within thirty (30) minutes.
- b. As soon as possible after notification, the District shall be informed of the estimated time for repairs; and if more than four (4) hours are required to repair the condition, the Control Officer shall request the source either to shut down the operation until repairs can be made or file immediately for an emergency or interim variance in accordance with Rule 85(d). In the event that the breakdown or upset condition occurs during other than normal working hours of the Air Pollution Control District, the intent to file for an emergency or interim variance shall be transmitted by telephone for recording within four (4) hours after the violation is reported and that every reasonable effort is taken to minimize the emissions.

Investigations will be made by a member of the District staff to verify the upset conditions.

This Rule is effective 10 September 1974.

Rule 55 has not been approved as part of the California State Implementation Plan.

IV. VISIBLE EMISSION OBSERVATIONS

STUDY METHODS

The primary purpose of the field study was to observe the major sources of visible emissions to determine the present status of compliance with applicable regulations. Detailed process information had previously been obtained by both San Bernardino County and EPA-Region IX personnel. Therefore, no detailed process evaluation was made. A limited walk-through reconnaissance of the plant was conducted by San Bernardino County personnel to familiarize study staff with the location and identification of emission sources to be observed.

Actual observations of visible emissions were conducted 16-24 September 1975. Ten certified smoke readers from NEIC, EPA-Region IX, the California Air Resources Board, and the San Bernardino County Air Pollution Control Zone took visible emission observations (VEO's) during the study. Sources observed are listed in Table IV-1. The smoke readers used standard observation methods (EPA Method 9) for orientation of the observer with respect to sun position, wind direction and viewing background. Environmental data, plume characteristics, source data, visible emission readings and other pertinent information for each set of readings were recorded on EPA-IX-Form 298 [Appendix], a modification of the California Air Resources Board visible emission observation record form. Environmental data collected by the observers included wind speed and direction, air temperature and relative humidity. Only summaries of the VEO records are included in this report. Individual VEO records are on-file at NEIC.

Table IV-1
SUMMARY OF SOURCES OF VISIBLE EMISSIONS EVALUATED

| PROCESS AREA | SOURCES |
|----------------------------|---|
| Blast Furnaces | Stove Stacks (3), Cast House Roof Monitors (3) |
| Sinter Plant | Main Stack |
| Coke Oven Batteries | Main Stacks (6), Oven Doors, Standpipes, Quench Towers |
| Open Hearth Furnaces | Main Stacks (8), Roof Monitors |
| Basic Oxygen Steel Process | Furnace Stacks (3), ESP [†] Bypass, Roof Monitors |
| Rolling Mills | Soaking Pit Stacks (19) |
| Hot Strip Mill | Reheat Furnace Stacks (3) |
| Scrap Cutting | Open Areas (2) |

† *electrostatic precipitator*

During the study, no attempt was made to record every visible emission that appeared to exceed applicable regulations. Instead, a number of VEO's were systematically taken at major emission sources within each process area listed in Table IV-1. When practical, incidental emissions occurring in the area being observed were recorded. Smoke readers periodically switched sources so that several readers observed each major source of emissions at different times during the survey.

Color photographs were taken to document visible emissions and to record a general overview of the plant. Several types of cameras were used and the photographs were taken from ground and roof level at the plant and from a low-flying light aircraft. The photographs are not presented in this report but are on-file at NEIC.

ENVIRONMENTAL DATA

In addition to the environmental data recorded by the study crew, data was obtained from a meteorological station at the plant operated by Kaiser's Environmental Quality Control Department. The system includes wind speed and direction sensors mounted on a tower atop the galvanizing facility and temperature, pressure, and relative humidity sensors on the roof of the Environmental Quality Control office. Data are automatically scanned, printed, and punched every two minutes. Hourly readings were tabulated from this file for the period during which VEO's were being taken [Table IV-2]. Wind speed data are suspect because of problems with the sensor at the lower wind speed threshold, which will be corrected by Kaiser in the near future. Relative humidity also appeared to be inaccurate when compared on several occasions to EPA wet and dry bulb hygrometer readings.

Table IV-2
METEOROLOGICAL DATA FROM KAISER STEEL
FONTANA, CALIFORNIA

| Date | Time | Wind Speed (km/hr) (mph) | | Wind Direction (°) | Temperature (°C) (°F) | | Relative Humidity (%) | Date | Time | Wind Speed (km/hr) (mph) | | Wind Direction (°) | Temperature (°C) (°F) | | Relative Humidity (%) |
|------|------|-----------------------------|------|-----------------------|--------------------------|----|--------------------------|------|------|-----------------------------|-----|-----------------------|--------------------------|-----|--------------------------|
| 9/16 | 1200 | 15.6 | 9.7 | 256 | 33 | 91 | 55 | 9/20 | 0800 | 0.6 | 0.4 | 128 | 22 | 71 | 65 |
| | 1300 | 9.0 | 5.6 | 279 | 34 | 94 | 57 | | 0900 | 0.6 | 0.4 | 192 | 24 | 76 | 62 |
| | 1400 | 19.2 | 11.9 | 256 | 36 | 97 | 57 | | 1000 | 0.6 | 0.4 | 281 | 27 | 80 | 60 |
| | 1500 | 25.2 | 15.7 | 279 | 36 | 97 | 56 | | 1100 | 0.6 | 0.4 | 267 | 28 | 83 | 56 |
| | 1600 | 19.3 | 12.0 | 276 | 36 | 96 | 56 | | 1200 | 0.6 | 0.4 | 219 | 30 | 86 | 53 |
| | 1700 | 26.2 | 16.3 | 274 | 36 | 96 | 57 | | 1300 | 0.6 | 0.4 | 283 | 31 | 88 | 54 |
| | 1800 | 19.6 | 12.2 | 260 | 34 | 94 | 57 | | 1400 | 0.6 | 0.4 | 258 | 32 | 90 | 52 |
| | 1900 | 23.2 | 14.4 | 257 | 31 | 88 | 57 | | 1500 | 0.6 | 0.4 | 293 | 33 | 91 | 51 |
| 9/17 | 0800 | 0.6 | 0.4 | 149 | 26 | 78 | 62 | 9/22 | 1600 | 0.6 | 0.4 | 254 | 33 | 91 | 51 |
| | 0900 | 0.6 | 0.4 | 171 | 28 | 83 | 59 | | 1700 | 0.6 | 0.4 | 252 | 32 | 89 | 51 |
| | 1000 | 0.8 | 0.5 | 208 | 29 | 85 | 58 | | 1800 | 0.6 | 0.4 | 284 | 30 | 86 | 54 |
| | 1100 | 0.6 | 0.4 | 255 | 31 | 87 | 58 | | 1900 | 0.6 | 0.4 | 277 | 28 | 82 | 53 |
| | 1200 | 0.6 | 0.4 | 283 | 32 | 90 | 58 | | 0800 | 0.6 | 0.4 | 076 | 27 | 79 | 51 |
| | 1300 | 16.4 | 10.2 | 288 | 33 | 92 | 58 | | 0900 | 0.6 | 0.4 | 077 | 35 | 95 | 41 |
| | 1400 | 19.5 | 12.2 | 264 | 34 | 94 | 58 | | 1000 | 0.6 | 0.4 | 101 | 37 | 99 | 33 |
| | 1500 | 24.3 | 15.1 | 250 | 35 | 94 | 58 | | 1100 | 0.4 | 0.3 | 397 | 37 | 98 | 32 |
| 9/18 | 1600 | 21.6 | 13.4 | 299 | 34 | 93 | 59 | 9/23 | 1200 | 0.4 | 0.3 | 405 | 37 | 99 | 32 |
| | 1700 | 30.4 | 18.9 | 280 | 33 | 92 | 53 | | 1300 | 0.4 | 0.3 | 422 | 38 | 100 | 32 |
| | 0800 | 7.0 | 4.3 | 174 | 24 | 75 | 62 | | 1400 | 1.1 | 0.7 | 402 | 39 | 103 | 33 |
| | 0900 | 0.6 | 0.4 | 180 | 27 | 81 | 59 | | 1500 | 0.4 | 0.3 | 403 | 39 | 102 | 32 |
| | 1000 | 0.4 | 0.3 | 213 | 27 | 81 | 58 | | 1600 | 0.4 | 0.3 | 413 | 39 | 103 | 28 |
| | 1100 | 0.4 | 0.3 | 266 | 29 | 84 | 57 | | 1700 | 0.4 | 0.3 | 400 | 39 | 102 | 27 |
| | 1200 | 0.4 | 0.3 | 238 | 31 | 87 | 55 | | 1800 | 0.6 | 0.4 | 413 | 36 | 97 | 27 |
| | 1300 | 0.4 | 0.3 | 262 | 31 | 88 | 51 | | 1900 | 0.6 | 0.4 | 420 | 34 | 94 | 25 |
| 9/19 | 1400 | 0.4 | 0.3 | 265 | 32 | 90 | 46 | 9/24 | 0800 | 0.6 | 0.4 | 52 | 24 | 76 | 31 |
| | 1500 | 21.8 | 13.5 | 278 | 32 | 90 | 45 | | 0900 | 0.6 | 0.4 | 147 | 29 | 85 | 30 |
| | 1600 | 9.8 | 6.2 | 264 | 32 | 89 | 47 | | 1000 | 0.6 | 0.4 | 191 | 33 | 91 | 30 |
| | 1700 | 33.2 | 14.4 | 280 | 32 | 89 | 46 | | 1100 | 0.6 | 0.4 | 204 | 34 | 94 | 29 |
| | 1800 | 19.0 | 11.8 | 269 | 29 | 85 | 46 | | 1200 | 0.6 | 0.4 | 242 | 36 | 96 | 29 |
| | 1900 | 0.6 | 0.4 | 259 | 27 | 81 | 45 | | 1300 | 0.6 | 0.4 | 243 | 37 | 98 | 09 |
| | 0800 | 0.6 | 0.4 | 146 | 22 | 72 | 54 | | 1400 | 0.4 | 0.3 | 400 | 38 | 101 | 10 |
| | 0900 | 0.6 | 0.4 | 166 | 24 | 76 | 54 | | 1500 | 0.4 | 0.3 | 401 | 38 | 101 | 10 |
| 9/20 | 1000 | 0.6 | 0.4 | 168 | 28 | 82 | 49 | 9/24 | 1600 | 0.4 | 0.3 | 391 | 39 | 102 | 11 |
| | 1100 | 0.6 | 0.4 | 254 | 29 | 85 | 49 | | 1700 | 0.4 | 0.3 | 411 | 38 | 101 | 11 |
| | 1200 | 0.4 | 0.3 | 200 | 30 | 86 | 50 | | 1800 | 0.4 | 0.3 | 261 | 35 | 95 | 10 |
| | 1300 | 0.4 | 0.3 | 251 | 32 | 90 | 51 | | 1900 | 0.6 | 0.4 | 279 | 33 | 91 | 10 |
| | 1400 | 0.4 | 0.3 | 279 | 32 | 90 | 51 | | 0800 | 0.6 | 0.4 | 103 | 27 | 81 | 38 |
| | 1500 | 0.4 | 0.3 | 260 | 32 | 90 | 49 | | 0900 | 0.6 | 0.4 | 165 | 29 | 85 | 39 |
| | 1600 | 1.3 | 0.8 | 267 | 32 | 90 | 50 | | 1000 | 0.6 | 0.4 | 191 | 33 | 91 | 39 |
| | 1700 | 0.6 | 0.4 | 283 | 32 | 89 | 53 | | 1100 | 0.6 | 0.4 | 167 | 35 | 95 | 37 |
| | 1800 | 0.6 | 0.4 | 273 | 29 | 84 | 53 | | 1200 | 0.6 | 0.4 | 111 | 37 | 98 | 37 |
| | 1900 | 0.6 | 0.4 | 268 | 27 | 81 | 56 | | 1300 | 0.6 | 0.4 | 110 | 37 | 99 | 37 |
| | | | | | | | | | 1400 | 0.6 | 0.4 | 39 | 38 | 100 | 37 |
| | | | | | | | | | 1500 | 0.4 | 0.3 | 167 | 38 | 100 | 36 |
| | | | | | | | | | 1600 | 0.4 | 0.3 | 147 | 38 | 99 | 36 |

The data are useful, however, in showing the general environmental conditions prevailing during the study.

FACILITY DESCRIPTION

The large Kaiser facility is the only fully-integrated steel mill in California. Basic operations include coke making with by-product recovery, basic production of iron in blast furnaces, conversion of iron to steel in both open hearth and basic oxygen process furnaces, a sintering plant, and a full range of finishing operations including production of structural shapes, pipe, sheet metal, galvanized products and tin plate. Production of coke, iron and steel in 1972 was 1.36, 2.07, and 2.72 million metric tons (1.50, 2.28, 2.99 tons) respectively.

Basic process units are compactly arranged in a rectangular area about 2.6 km²(1.0 mi²) [Fig. IV-1]. The basic coke, iron and steel making processes are located in the north half of this area. Most of the emission points of interest are also in the north half. Finishing operations occupy most of the south half of the plant site.

An inventory of stacks including sources of emissions and stack characteristics is presented in Table IV-3. The relative locations of the stacks are shown schematically in Figure IV-2.

In the following sections, the results of the visible emission observations are discussed by process area. A limited basic process discussion common to the industry is presented to orient the reader and to define what emission points were observed. Minor variations may be expected throughout the industry. Detailed process information

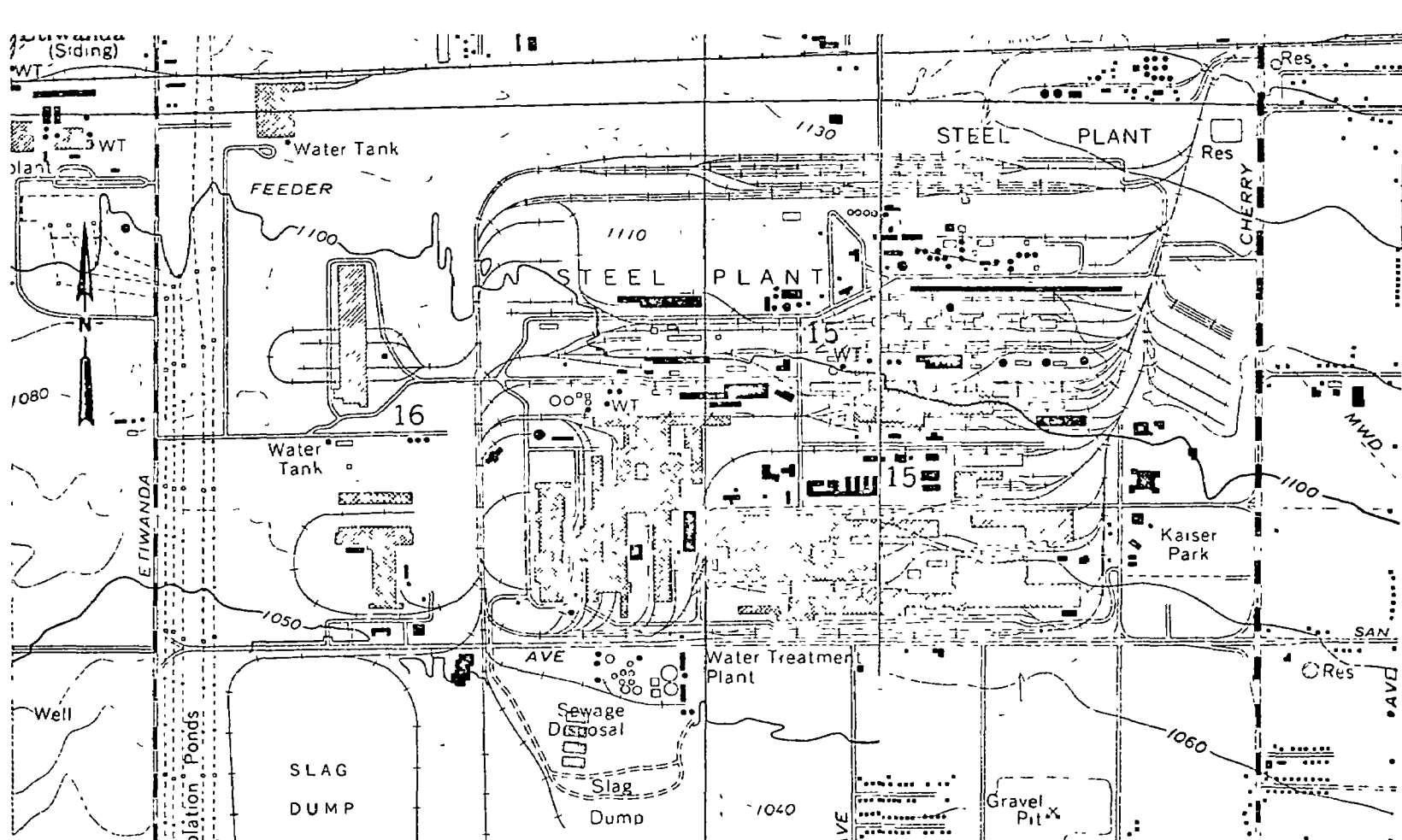


Figure IV-1. Kaiser Steel Plant Vicinity Map

Table IV-3
STACK CHARACTERISTICS[†]

| Stack ^{††} | Type Furnace | Height | Type Stack | Stack | Type Furnace | Height | Type Stack |
|---------------------|--------------------------|--------|------------|-------|--|--------|-------------------|
| 1. | Blast Furnace #1 | 200' | Concrete | 45. | Merchant Mill (Skelp line) | 135' | Concrete |
| 2. | Blast Furnace #2 | 200' | Concrete | 46. | Plate Mill (Slab Fce. #2) | 159' | Steel (Abandoned) |
| 3. | Blast Furnace #3 | 200' | Concrete | 47. | Plate Mill (Slab Fce. #1) | 175' | Steel |
| 4. | Blast Furnace #4 | 200' | Concrete | 48. | Plate Mill (Slab Fce. #3) | 175' | Steel |
| 5. | Sinter Plant | 300' | Concrete | 49. | C.W. Pipe Mill (Skelp Fce.) | 125' | Steel |
| 6. | Coke Oven, Battery A | 225' | Concrete | 50. | C.W. Pipe Mill (Galv. Dept.) | 52' | Steel |
| 7. | Coke Oven, Battery B | 225' | Concrete | 51. | C.W. Pipe Mill (Galv. Dept.) | 60' | Steel |
| 8. | Coke Oven, Battery C | 225' | Concrete | 52. | Merchant Mill (Roughing) | 125' | Steel (Removed) |
| 9. | Coke Oven, Battery D | 225' | Concrete | 53. | Structural Mill (29") | 159' | Steel |
| 10. | Coke Oven, Battery E | 225' | Concrete | 54. | Tin Plate Mill (Scruff) | 75' | Steel |
| 11. | Coke Oven, Batteries F&G | 250' | Concrete | 55. | Tin Plate Mill (Pickle) | 70' | Steel |
| 12. | Open Hearth #1 | 175' | Concrete | 56. | 86" Hot Strip Mill (Fce. #3) | 150' | Steel |
| 13. | Open Hearth #2 | 175' | Concrete | 57. | 86" Hot Strip Mill (Fce. #2) | 150' | Steel |
| 14. ^{†††} | Open Hearth #3 | 175' | Concrete | 58. | 86" Hot Strip Mill (Fce. #1) | 150' | Steel |
| 15. | Open Hearth #4 | 175' | Concrete | 59. | Power House | | |
| 16. | Open Hearth #5 | 175' | Concrete | 60. | Power House | | |
| 17. | Open Hearth #6 | 175' | Concrete | 61. | Power House | | |
| 18. | Open Hearth #7 | 175' | Concrete | 62. | Power House | | |
| 19. | Open Hearth #8 | 175' | Concrete | 63. | Power House | | |
| 20. | Open Hearth #9 | 175' | Concrete | 64. | Power House | | |
| 21. | Oxygen Furnace | 150' | Steel | 65. | Power House | | |
| 22. | Oxygen Furnace | 150' | Steel | 66. | Flare | | |
| 23. | Oxygen Furnace | 150' | Steel | 67. | Flare | | |
| 24. | Soaking Pits 21 & 22 | 110' | Concrete | 68. | Sheet Galv. Pickle Line | | |
| 25. | Soaking Pits 19 & 20 | 110' | Concrete | 69. | Hot Scarfer | | |
| 26. | Soaking Pits 17 & 18 | 110' | Concrete | 70. | 62" Pickle Line | | |
| 27. | Soaking Pits 15 & 16 | 110' | Concrete | 71. | Alk. Cln. Line Sheet Galv. | | |
| 28. | Soaking Pits 13 & 14 | 110' | Concrete | 72. | Walking Beam Furnace | | |
| 29. | West preheating pits | 75' | Steel | 73. | Type R Rotoclone Exhaust Stack (Foundry) | | |
| 30. | Soaking Pits 11 & 12 | 110' | Concrete | 74. | Type N Rotoclone Exhaust Stack (Foundry) | | |
| 31. | Soaking Pits 9 & 10 | 110' | Concrete | 75. | Type N Rotoclone Exhaust Stack (Foundry) | | |
| 32. | Soaking Pits 7 & 8 | 110' | Concrete | | | | |
| 33. | Soaking Pits 5 & 6 | 110' | Concrete | | | | |
| 34. | Soaking Pits 3 & 4 | 110' | Concrete | | | | |
| 35. | East preheating pits | 75' | Steel | | | | |
| 36. | Soaking Pits 23 & 24 | 110' | Concrete | | | | |
| 37. | Soaking Pits 25 & 26 | 110' | Concrete | | | | |
| 38. | Soaking Pits 27 & 28 | 110' | Concrete | | | | |
| 39. | Soaking Pits 29 & 30 | 110' | Concrete | | | | |
| 40. | Soaking Pits 31 & 32 | 110' | Concrete | | | | |
| 41. | Soaking Pits 33 & 34 | 110' | Concrete | | | | |
| 42. | Soaking Pits 35 & 36 | 110' | Concrete | | | | |
| 43. | Soaking Pits 37 & 38 | 110' | Concrete | | | | |
| 44. | Soaking Pits 39 & 40 | 110' | Concrete | | | | |

[†] Table prepared by the San Bernardino County Air Pollution Control Zone staff and current through 15 October 1975

^{††} See Figure IV-2 for stack locations.

^{†††} Abandoned

is on-file at the San Bernardino County Air Pollution Control Zone and EPA-Region IX offices. Observations of visible emissions exceeding applicable regulations are summarized and evaluated.

BLAST FURNACES

Basic Process

Blast furnaces are used to reduce iron ore to metallic iron. The basic process flow is shown schematically in Figure IV-3. Raw materials including coke, iron ore, limestone and sinter are intermittently charged to the top of the blast furnace through a hopper equipped with air locks. Hot air blown into the bottom of the furnace causes the coke to burn, producing high temperatures and large volumes of carbon monoxide (CO). The combination of heat and the reducing atmosphere in the mid-level of the furnace converts the iron ore to metallic iron that collects in a molten state at the bottom of the furnace. Impurities in the ore combine with the limestone to form slag that collects as a liquid on top of the molten iron. This reduction process proceeds continuously. Periodically the furnace is tapped during casting operations and the molten iron is drawn off to hot metal cars for transfer to the steelmaking operations. Slag is also drawn off periodically. In many blast furnace operations, the slag flows to ladles for transfer to disposal points at other plant locations. At Fontana, the slag is discharged directly to pits adjacent to the blast furnaces. After cooling, the solidified slag is removed mechanically for byproduct processing.

The gas that flows upward in the furnace has a useful fuel value because of its high CO content. Before use, the gas is cleaned in a dust catcher and a wet scrubber to remove flue dust. The flue dust

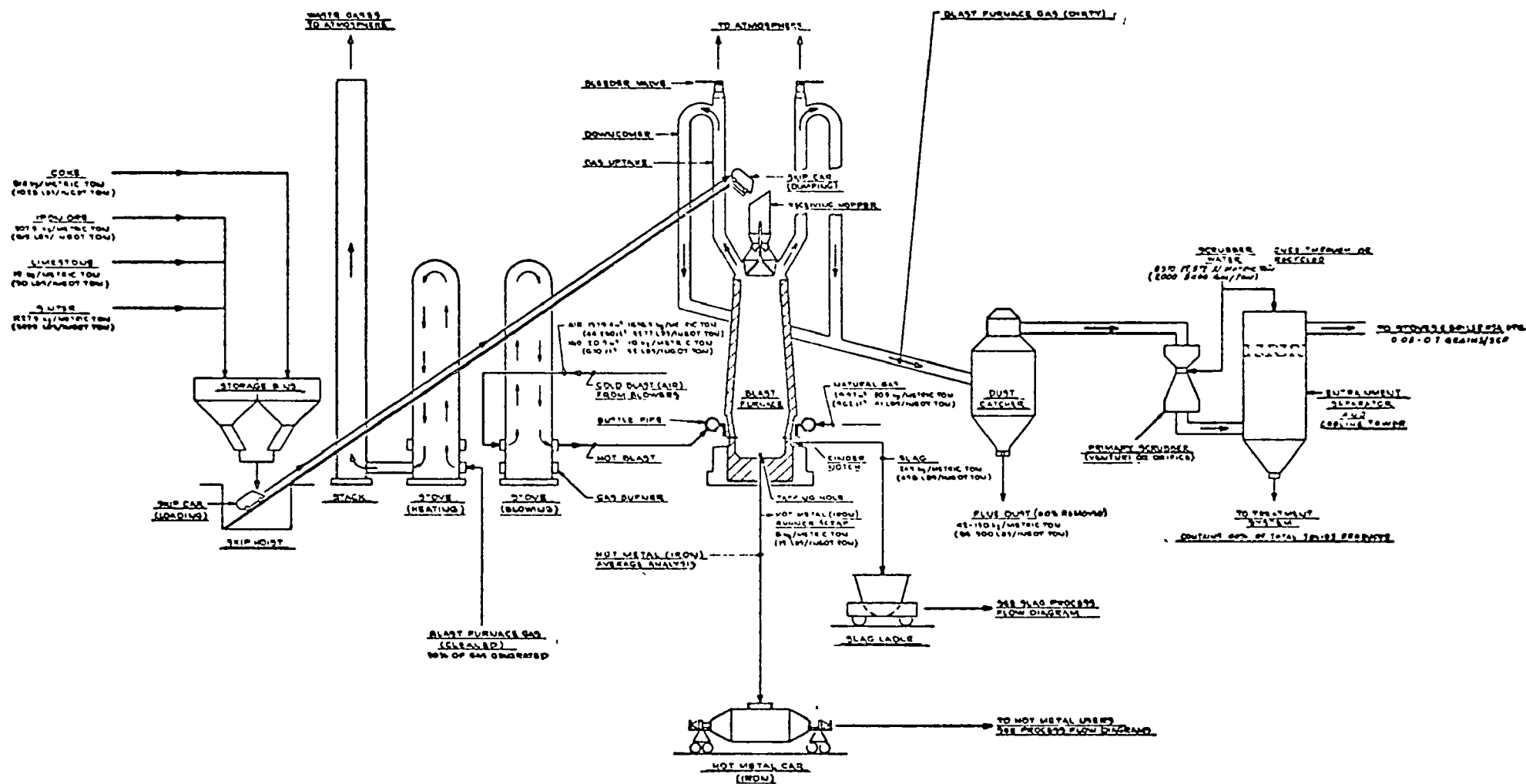


Figure IV-3. Typical Blast Furnace Process Flow Diagram

(primarily iron fines) is sent to the sinter plant for processing and recycle to the blast furnace. About one-third of the blast furnace gas is used to heat stoves as discussed below. The remainder is primarily used to fire powerhouse boilers that drive turbines that compress the air for the hot blast.

Each blast furnace is equipped with three stoves used to heat air for the hot blast. Blast furnace gas is burned in the stoves to heat a checkerwork of refractory material filling the stove. Combustion gases are vented to the atmosphere through a single stack serving all three stoves. Normally, while two stoves are being heated, cold air is blown through the third (preheated) stove and heated by the refractory material before entering the blast furnace.

Blast furnace gas is usually cleaned before burning in the stove. However, periodically the blast furnace is "back drafted." During this operation, gas is drawn off the bottom of the furnace and, without being cleaned, it is burned in a stove.

Emission Sources

Visible emissions may occur from the stove stack, from the hopper at the top of the furnace during charging operations, from bleeder valves on the blast furnace gas lines, and from the cast house roof monitors during hot metal transfer and slag drawoff operations.

Air Pollution Controls

There are no air pollution control devices on the stove stack, the furnace hopper or the bleeder valves. The blast furnace cast house encloses the base area of the furnace where hot metal transfer

and slag drawoff operations take place. Emissions from these sources are thus semi-confined in the building but vent directly to the atmosphere through roof monitors.

Observations

The Fontana mill has four blast furnaces numbered 1 through 4 from west to east [Fig. IV-2]. The stove stacks have the same numbers. Furnaces No. 2 and No. 4 were in continuous operation during the survey. Furnace No. 3 was out of operation for relining. Furnace No. 1 was being reheated and was placed in operation on 22 September. Furnace No. 2 was casting on a 3-1/2 hour schedule beginning at 3:00 a.m. daily; iron from the unit normally supplies the basic oxygen steel process furnaces. The No. 4 furnace was casting on a 4-hour schedule starting at 12:30 a.m. daily. This unit supplied iron to the open hearth furnaces and the foundry.

Observations of the stove stacks for the three operating furnaces documented seven occurrences of visible emissions in excess of allowable limits. These are summarized in Table IV-4. The table lists the total time during each observation period that emissions were equal to or greater than 20% opacity. Rule 50-A limits emissions to 20% opacity; however, since an average deviation not to exceed 7.5% opacity is allowed during certification readings, Region IX Enforcement Division considers 30% opacity to be in violation of Rule 50-A for purposes of enforcement actions. Thus the table also includes the time readings exceeded 30% opacity. Actual observation periods varied in length and ranged from a minimum of the time shown in the table to a maximum of 60 minutes. In cases where the emissions were essentially in excess of limits continuously, observation periods of 10 to 15 minutes were used. The emissions thus continued beyond the recorded time. For intermittent emissions or occasional emissions in excess of limits, longer observation periods were necessary.

Table IV-4 also lists the maximum opacity observed and the average opacity of readings exceeding the 20% and 30% values. These give an indication of how excessive the observed emissions were.

For stack No. 1 serving stoves on blast furnace No. 1, one observation of excessive emissions was made while the furnace was being heated and two more observations after the furnace began operating.

The Corporation indicated that visible emissions from the stacks result from "back drafting" during casting. This practice draws dirty furnace gases back through the stoves where the gases are burned and exhausted through the stove stack.

Table IV-4
SUMMARY OF VISIBLE EMISSION
OBSERVATIONS AT THE BLAST FURNACE PROCESS AREA

| Emission Source | Date (1975) | Time (min) | | | Avg. Opacity [†] | | Max. Opacity (%) |
|-----------------------------|-------------|------------|-------|-------|---------------------------|------|------------------|
| | | Observed | >20% | >30% | >20% | >30% | |
| Stack 1 | 9/17 | 10.75 | 10.75 | 10.75 | 79 | 79 | 100 |
| | 9/23 | 13 | 12.50 | 8.50 | 29 | 32 | 35 |
| | 9/23 | 9.75 | 9.75 | 9.75 | 63 | 63 | 70 |
| Stack 2 | 9/20 | 12 | 12 | 12 | 72 | 72 | 90 |
| Stack 4 | 9/17 | 11.5 | 11.5 | 11.5 | 74 | 74 | 90 |
| | 9/19 | 20 | 20 | 20 | 84 | 84 | 100 |
| | 9/20 | 12 | 12 | 10 | 36 | 38 | 40 |
| #4 Blast Furnace Cast House | 9/19 | 9 | 9 | 9 | 68 | 68 | 95 |

[†] Average opacity of emissions observed in excess of stated value.

Visible emissions occasionally were observed originating from roof monitors on blast furnace cast houses during casting and slag drawoff activities. One such excessive emission recorded during slag drawoff is shown in Table IV-4.

SINTERING PLANT

Basic Process

The primary function of a sintering plant is to agglomerate and recycle fines back to the blast furnace. Fines, consisting of iron-bearing wastes such as mill scale from finishing operations and dust from the basic oxygen open hearth and blast furnaces, are blended with coke fines that serve as fuel in the sintering process. The material is spread on a moving down-draft grate and ignited. Combustion of the coke produces heat that fuses the material together. The fused sinter is crushed, screened and air-cooled.

The material handling, crushing and cooling operations are very dusty. In addition, dust and volatilized oil are present in the process gases. The sinter machine, crusher, cooler and part of the material-handling equipment are contained in the sinter plant building.

Emission Sources

Visible emissions may occur as fugitive dust emissions from material handling operations outside the sinter plant building or as process gas emissions from the sinter plant stack (stack No. 5). At 91 m (300 ft), this stack is the tallest in the steel mill.

Air Pollution Controls

Process gases from the sinter emissions and dust emissions from other points within the sinter plant building are exhausted to a large baghouse before discharge to the plant stack.

Observations

Visible emissions from the sinter plant stack were infrequent. When visible, the plume was white and detached. The visible emissions probably originated from volatilization of oil from mill scale fed to the process.

A single 9.25-minute observation of stack No. 5 on 16 September documented excessive emissions. Emissions of greater than 20% opacity were recorded for the total of 9.25 minutes of which 7.50 minutes were in excess of 30% opacity. The excessive emissions averaged 32% opacity for the 9.25-minute period and 34% opacity during the 7.5-minute period. The maximum capacity observed during the interval was 40%.

COKE OVEN BATTERIES

Basic Process

The primary function of the coke ovens is to convert bituminous coal to coke. This is accomplished by heating the coal in special ovens to drive off the volatiles, leaving the residue coke. The volatiles are collected and processed to yield a number of byproduct chemicals and coke oven gas. The gas is used to fuel burners in the ovens and other furnaces in the steel mill complex.

Figure IV-4 is a schematic diagram of a typical process flow for coke ovens. The ovens are rectangular and constructed of silica brick. Each oven is usually about 45 cm wide, 4.5 high and

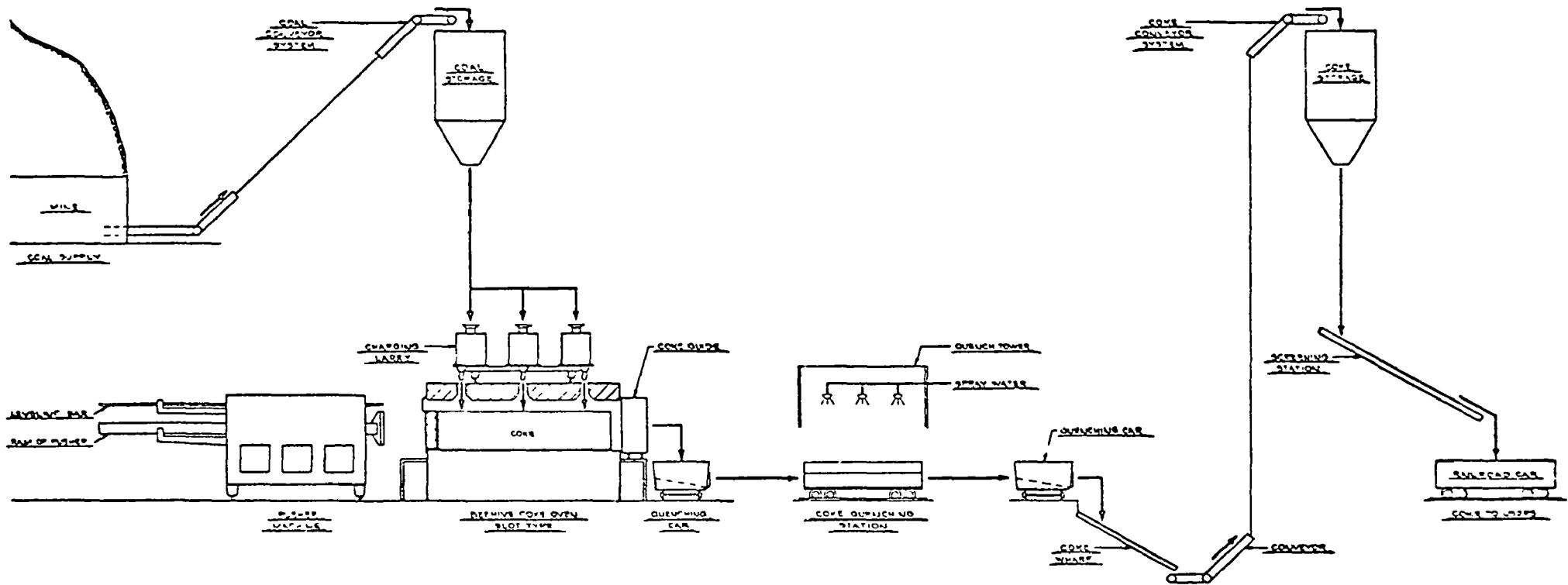


Figure IV-4. Typical Coke Oven Process Flow Diagram

12 m long (18 in x 15 ft x 39 ft). The ovens are arranged side-by-side in groups called batteries. The Fontana installation has seven batteries designated A through G from west to east. Each battery has 45 ovens. The ovens are numbered sequentially from west to east as 1 through 349 except that numbers ending in 0 are not used.

Coal is charged through holes (ports) in the roof of each oven from hopper bottom (larry) cars that run on tracks on top of the battery. A leveler bar on the push machine that runs on tracks parallel to the battery is inserted into the oven through the small chuck door to level the top of the coal. Heat is applied by burning coke oven gas in flues in the walls between ovens. Combustion products are collected from all flues in a battery and discharged through one stack.

During the coking period, volatile materials are distilled from the coal and are collected through standpipes passing out through the roof of the oven at either end. These materials are processed in the byproducts plant and coke oven gas is recovered.

When the coking period is completed, the doors at both ends of the oven are opened and the red-hot coke is pushed from the oven into the quench car by the ram on the push machine. The quench car moves the coke to the quench tower where it is sprayed with water to cool it. The cooled coke is delivered to handling equipment for subsequent movement to point of use, normally the blast furnaces.

Once the coke has been removed from an oven, the doors are closed and the charging cycle is repeated.

Emission Sources

Combustion gases from the flues are exhausted to the atmosphere through the main battery stack. If there are leaks in the oven walls,

volatile material from the ovens may also vent through this stack. Visible emissions occur when the coke is pushed into the quench car, and from the quench car, as it is moved to the quench tower. The quench produces visible emissions from the tower, along with large volumes of steam. Volatile materials in the ovens may escape to the atmosphere through leaks around the charging ports and oven doors and from leaks at blowoff valves on the gas standpipes or around the base of the standpipes. Emissions also occur from the charging ports during charging operations.

Air Pollution Controls

There are no control devices on any of the sources of emissions with the exception of a TRW charged droplet scrubber installed on Battery A for a pilot study of control of flue gas emissions.

Observations

Batteries A through E are served by stacks #6 through 10. Batteries F and G are served by stack No. 11. During this survey, the coking period for Batteries A through E was 40 hours while for Batteries F and G, the period was 15.7 to 17.1 hours. Batteries A and E are operated at lower temperatures than are F and G. Each oven was charged with 12,200 kg (26,800 lb) of coal.

Visible emissions from the battery stack normally occur only when leaks into the flues from the ovens are present. Since the batteries are never shut down, maintenance to seal the leaks must be done while the ovens are hot. A silicone sealer is used for this purpose.

Observations of excessive visible emissions from coke battery stacks are summarized in Table IV-5. The worst emissions occurred

Table IV-5
SUMMARY OF VISIBLE EMISSION OBSERVATIONS
AT COKE BATTERY STACKS

| Battery | Date (1975) | Time (min) | | | Avg. Opacity [†] | | Max. Opacity (%) |
|---------------------|----------------|------------|-------|-------|---------------------------|------|---------------------|
| | | Observed | >20% | >30% | <20% | >30% | |
| A (Stack #6) | 9/17 | 18.25 | 18.25 | 18.25 | 98 | 98 | 100 |
| | | 28 | 25.75 | 25.50 | 79 | 80 | 100 |
| | 9/18 | 24.75 | 24.75 | 24.75 | 94 | 94 | 100 |
| | | 12.25 | 12.25 | 12.25 | 50 | 50 | 60 |
| | | 25 | 25 | 25 | 91 | 91 | 100 |
| | | 9 | 9 | 9 | 55 | 55 | 65 |
| | 9/20 | 10 | 10 | 10 | 88 | 88 | 100 |
| | | 13 | 13 | 13 | 57 | 57 | 65 |
| | 9/22 | 23.50 | 23.5 | 23.5 | 98 | 98 | 100 |
| | | 20 | 20 | 20 | 80 | 80 | 100 |
| B (Stack #7) | 9/17 | 8 | 7.75 | 7 | 67 | 72 | 80 |
| | | 17.25 | 17.25 | 17.25 | 82 | 82 | 100 |
| | 9/18 | 22.50 | 22.50 | 22.50 | 74 | 74 | 100 |
| | | 13 | 13 | 12.50 | 43 | 44 | 65 |
| | | 20 | 20 | 20 | 93 | 93 | 100 |
| | 9/20 | 10 | 10 | 10 | 84 | 84 | 100 |
| | 9/22 | 19 | 19 | 19 | 86 | 86 | 100 |
| | | 9 | 9 | 9 | 74 | 74 | 95 |
| C (Stack #8) | 9/17 | 9.75 | 9.75 | 8.75 | 53 | 56 | 100 |
| | 9/18 | 16.25 | 16.25 | 16.25 | 75 | 75 | 100 |
| | 9/19 | 10 | 10 | 9.25 | 48 | 50 | 65 |
| D (Stack #9) | 9/17 | 6 | 5.5 | 3.75 | 44 | 55 | 85 |
| | | 13.75 | 13.75 | 12.75 | 52 | 55 | 100 |
| | 9/18 | 15 | 15 | 15 | 56 | 56 | 85 |
| | | 7.25 | 7 | 5 | 60 | 75 | 95 |
| | 9/19 | 15 | 13 | 8.5 | 34 | 44 | 60 |
| | | 19 | 18.75 | 15.75 | 48 | 63 | 80 |
| | | 12 | 12 | 12 | 80 | 80 | 100 |
| | 9/22 | 10 | 10 | 8.75 | 43 | 46 | 70 |
| E (Stack #10) | 9/18 | 26 | 25.75 | 24.50 | 61 | 63 | 95 |
| | | 16.75 | 15 | 13 | 42 | 46 | 80 |
| | 9/19 | 23 | 22.5 | 17.25 | 35 | 39 | 70 |
| | | 13 | 13 | 10.5 | 55 | 63 | 100 |
| | | 12.25 | 11.75 | 11 | 51 | 53 | 80 |
| | 9/20 | 22.25 | 22.25 | 18.75 | 49 | 54 | 95 |
| F, G (Stack #11) | 17 | 10.25 | 9.5 | 5.5 | 49 | 68 | 100 |
| | | 19 | 18.75 | 16 | 45 | 49 | 80 |
| | | 6 | 4.75 | 3.5 | 37 | 42 | 50 |
| | 9/18 | 4.25 | 4.25 | 4 | 48 | 50 | 65 |
| | 9/19 | 8 | 8 | 8 | 85 | 85 | 100 |
| | 9/20 | 10.5 | 9 | 4.25 | 28 | 33 | 40 |

† Average opacity observed in excess of stated value.

from stack #6 serving Battery A, the oldest battery in the installation.

Excessive visible emissions also occurred from other coke battery operations. The most significant emissions were from oven door leaks. Observations of excessive door emissions are summarized in Table IV-6. Door leaks occurred both immediately after charging and later during the coking period. Doors on the A through E Batteries (oven numbers less than 250) appeared to take longer to seal. The company indicated that this was due to the lower operating temperatures in these batteries.

Observations were made of all ovens on three days to determine the frequency of occurrence of door leaks without regard to the opacity of emissions. The results of these observations are shown graphically in Figure IV-5. On 20 September, only the coke side of the battery was observed during the first five time periods. Beginning at 1555 hours, both sides of the battery were observed, as was the case for all three periods on 23 September. On 24 September, only the push side was observed. These observations indicated that door leaks occurred much more frequently on the push side, probably due to additional wear produced by the pushing ram and leveling bar striking the rim of the oven and chuck doors. Changes in pressure within the coke oven gas collecting system was the probable cause of changes in the number of door leaks. This is shown in Figure IV-5 for 1130 hours on 23 September and 1135 hours on 24 September when a large increase in door leaks occurred.

Closer examination of individual doors after charging indicated that in some cases the initial leakage emissions were from 20 to 40% opacity and sealed within 15 minutes. Others took longer to seal or were of a higher opacity. These high opacity emissions are summarized in Table IV-6 for the observations of leaks immediately after charging. Emissions from doors that took longer to seal are summarized under the observations taken during coking.

Table IV-6
SUMMARY OF VISIBLE EMISSION OBSERVATIONS
AT MISCELLANEOUS COKE BATTERY SOURCES

| Date (1975) | Oven No. | Oven Side | Time (Min.) | | | Avg. Opacity [†] | | Max. Opacity (%) |
|---------------------------------------|-------------|--------------|-------------|-------|-------|---------------------------|------|---------------------|
| | | | Observed | >20% | >30% | >20% | >30% | |
| Door Leaks Immediately After Charging | | | | | | | | |
| 9/23 | 204 | Coke | 8.25 | 8.25 | 8.25 | 48 | 48 | 80 |
| | 244 | Coke | 7 | 7 | 7 | 64 | 64 | 80 |
| 9/24 | 75 | Coke | 22 | 22 | 20.75 | 66 | 70 | 100 |
| | 85 | Coke | 20.25 | 19.25 | 14.75 | 38 | 43 | 60 |
| | 267 | Coke | 11.75 | 11.75 | 11 | 52 | 53 | 100 |
| | 277 | Coke | 8.25 | 8.25 | 6 | 36 | 41 | 60 |
| | 283 | Push | 9.25 | 9.25 | 9.25 | 65 | 65 | 70 |
| | 25 | Coke | 6.25 | 6.25 | 6.25 | 41 | 41 | 50 |
| | 35 | Coke | 9 | 9 | 9 | 45 | 45 | 55 |
| | 45 | Coke | 9.75 | 9.75 | 9.75 | 48 | 48 | 60 |
| | 285 | Coke | 14 | 13 | 11.25 | 39 | 42 | 60 |
| | 333 | Push | 9 | 9 | 9 | 61 | 61 | 70 |
| Door Leaks After Coking | | | | | | | | |
| 9/17 | 24 | Push | 9 | 9 | 9 | 82 | 82 | 100 |
| 9/20 | 157 | Push | 15 | 14.5 | 14.25 | 44 | 44 | 60 |
| | 14 | Coke | 9 | 9 | 9 | 56 | 56 | 85 |
| 9/22 | 186 | Push | 11.75 | 11.75 | 11.75 | 74 | 74 | 80 |
| | 124 | Push | 6.75 | 6.75 | 6.75 | 64 | 64 | 80 |
| 9/23 | 74 | Coke | 8.75 | 8.75 | 8.75 | 74 | 74 | 80 |
| 9/24 | 53 | Push | 10 | 10 | 10 | 80 | 80 | 90 |
| | 143 | Coke | 7.75 | 7.75 | 7.75 | 74 | 74 | 80 |
| | 15 | Push | 10 | 10 | 10 | 83 | 83 | 90 |
| | 13 | Coke | 10.25 | 10.25 | 10.25 | 61 | 61 | 80 |
| | 101 | Coke | 13 | 13 | 13 | 48 | 48 | 65 |
| | 65 | Push | 10 | 10 | 10 | 70 | 70 | 80 |
| | 213 | Coke | 10 | 10 | 9.5 | 43 | 44 | 65 |
| | 47 | Coke | 10 | 10 | 9 | 48 | 50 | 70 |
| | 315 | Coke | 13 | 13 | 12.75 | 53 | 54 | 100 |
| | 127 | Coke | 11.25 | 9.75 | 7.5 | 33 | 36 | 45 |
| 157 | Coke | 9 | 9 | 8 | 58 | 62 | 100 | |
| Standpipe Leaks | | | | | | | | |
| 9/20 | 129 | Coke | 10 | 10 | 10 | 85 | 85 | 100 |
| | 187 | Push | 15.75 | 14.75 | 14.25 | 49 | 50 | 65 |
| Quench Tower Emissions | | | | | | | | |
| 9/18 | East | - | 23.25 | 20.25 | 16.50 | 41 | 46 | 100 |
| 9/19 | East | - | 17 | 17 | 16.75 | 54 | 54 | 80 |
| 9/20 | East | - | 14.50 | 13.50 | 12.25 | 47 | 49 | 100 |

[†] Average opacity observed in excess of stated value.

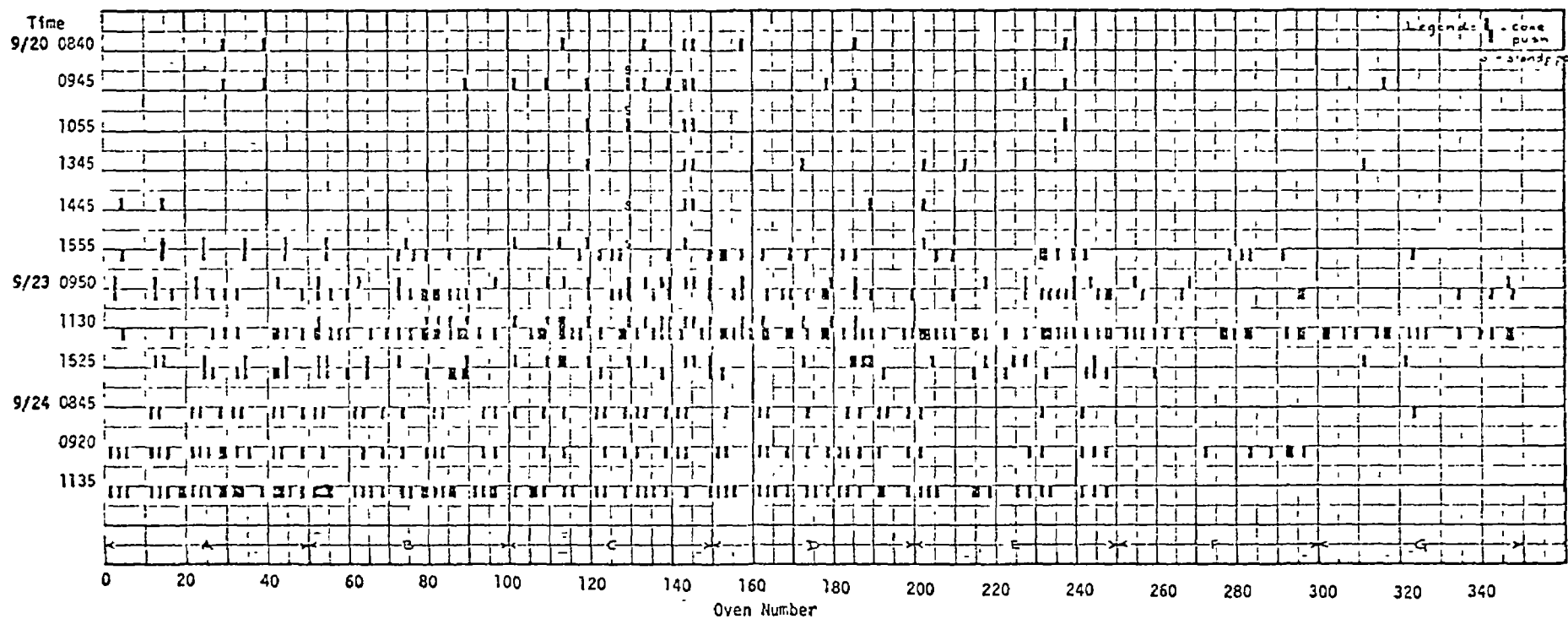


Figure IV-5. Observed Coke Oven Leaks

Excessive emissions from standpipe leaks on top of the coke batteries were observed on several occasions [Table IV-6]. The optimum location for observing these leaks, however, is from on top the batteries as discussed below.

Excessive emissions were also observed from the quench towers [Table IV-6]. When the quench car arrived at the quench tower, emissions could be observed before quenching began. During quenching, large steam clouds were produced but dissipated about 30 m (100 ft) downwind leaving a visible white plume. About 3 minutes were required from the time the car arrived at the tower until the quench was completed, during which time reading was possible.* On several occasions, a delay occurred between arrival of the quench car at the tower and the start of the water spray. This resulted in excessive smoke emissions. For Batteries F and G, processing coke on a 15 to 17 hour cycle, about six quenches per hour would be expected. However, during one 60-minute period, eight quenches were observed.

Each process associated with the pushing and charging cycle was timed to examine the range of these variables. The push cycle was separated into the period between the coke door opening and time the coke began to move; the time during which the coke was being pushed into the coke car; and the time of travel of the coke car to the quench tower.

Charge time was measured from the time the larry car moved into place until it moved from over the oven. This may not correspond in all cases to the actual charging time. However, to determine actual charge time would have required personnel to be on top of the battery.

* *Deterioration of baffles in the tower and the poor quality of quench water probably contributed to these emissions.*

The company instituted stage charging quite recently, 5 September, on Batteries A through E and 25 August for Batteries F and G. Only one larry car had been completely modified for this new procedure and it was out of operation. The company indicated that this change was being resisted (as most changes will be) by operating personnel. Thus, while sequential charging required about 2-1/4 minutes, stage charging was presently requiring between 3 and 6 minutes but should reduce to about 2-3/4 minutes when accepted. The break-in period, plus the hazards and heat associated with monitoring the process from top-side during high ambient temperature conditions, suggested that timing and evaluation of visible emissions from the push-charge cycle would be more productive and meaningful at a later date. The heat and hazardous conditions also suggested that standpipe and charge port leaks would best be evaluated at that time as well.

The largest time variable in the push cycle (27 observations) was the time between door opening and the push. This ranged from 30 seconds to 14-1/2 minutes, with a median of 2-3/4 minutes. The push time into the coke car was relatively uniform, between 25 and 50 seconds, with a median of 30 seconds. The time to reach one of the three quench towers largely depended on the towers in use relative to the location of the particular oven. This ranged between 15 seconds and 2-1/3 minutes with a median of 55 seconds. Total time for the push varied from 2 to 17-1/4 minutes with a median of 4-1/4 minutes.

Charging time as measured required from 2-1/4 to 12-3/4 minutes (23 observations) with a median time of 4-1/4 minutes. Four of these observations (17%) were below 3 minutes, indicating either that stage charging was beginning to be accepted or that sequential charging was still occurring.

OPEN HEARTH FURNACES

Basic Process

For many years, the open hearth furnace process was the major means of converting iron to steel. In most steel mills, the open hearths are being replaced by basic oxygen steel process (BOSP) furnaces. At Fontana, both processes are in use but additional conversions from open hearth to BOSP furnaces have been proposed as discussed in Section V.

The open hearth furnace is basically a shallow rectangular refractory basin or hearth enclosed by refractory lined walls and roof. A typical process flow diagram is shown in Figure IV-6. Scrap iron and steel, iron ore, and limestone are charged into the furnace, and fuel from a burner at one end of the hearth is ignited to produce heat over the scrap to melt it. Combustion gases are drawn off at the other end of the hearth through a chamber filled with a checkerwork of refractory materials that absorb heat and cool the gas. An identical chamber at the burner end of the furnace preheats combustion air. Periodically the air flow direction is reversed.

When meltdown of the scrap has been completed, molten iron from the blast furnaces is charged. The iron is poured from the hot metal transfer car into a hot metal ladle which, in turn, charges it into the furnace.

As heating continues, carbon monoxide and carbon dioxide are released from the iron ore and limestone to produce the ore and lime boils. Further heating refines the steel by removing impurities. The refining period can be speeded up by lancing the surface of the hot metal with pure oxygen.

When the proper steel composition and temperature are reached, the furnace is tapped and the molten contents drawn off to a teeming ladle. Slag is floated off the metal surface in the teeming ladle to slag ladles for disposal. The molten steel is ladled into ingot molds and is air cooled.

Emission Sources

The primary emission source is the stack that conveys combustion gases and fumes from the hearth to the atmosphere. In addition, various operations produce emissions inside the furnace building that are vented to the atmosphere through roof monitors. These include the charging of scrap and hot metal, the transfer of hot metal to the charging ladle, and the tapping of steel into the teeming ladle.

Air Pollution Controls

Emissions from the hearth are controlled by electrostatic precipitators (ESP) before release to the furnace stack. There are no controls on roof emissions.

Observations

There are currently eight operable open hearth furnaces at Fontana. These are numbered 1 through 9 with unit No. 3 disassembled. The corresponding stack numbers and locations are shown in Table IV-3 and Figure IV-2. Stack No. 14 that formerly served furnace No. 3 is still in place. During the survey only furnaces No. 1, 2, 5 and 9 were operating.

Excessive visible emissions were observed to originate from both furnace stacks and roof monitors. These are summarized in Table IV-7.

Excessive stack emissions generally occur as a result of mechanical or electrical problems with the ESP or when rapid fluctuations in process emissions cause the ESP to be operated outside design specifications.

Process data (heat reports) made available by the company indicated that the overall time from charge to tap was between 5 and 7 hours. Charging of raw materials required between 30 and 90 minutes, followed by the addition of hot metal between 30 minutes to 2-1/2 hours later. Comparison of stack emission observations with these heat records showed that the excessive visible emissions occurred during the working period following hot metal addition, except for one instance when emissions were observed during the melting period.

The emissions during the working period probably occurred during oxygen lancing. For those cases checked, no excessive visible emissions from the stacks occurred during scrap charging or hot metal addition.

BASIC OXYGEN STEEL PROCESS FURNACES

Basic Process

The basic oxygen steel process, through the use of large volumes of oxygen, condenses the process for converting iron to steel from 5 to 7 hours in the open hearth furnaces into a period of less

Table IV-7
SUMMARY OF VISIBLE EMISSION OBSERVATIONS
AT OPEN HEARTH FURNACE AREA

| Emission Source | Date (1975) | Time (min) | | | Avg. Opacity [†] | | Max. Opacity (%) | |
|--------------------------|--------------------------|------------|-------|-------|---------------------------|------|------------------|----|
| | | Observed | >20% | >30% | >20% | >30% | | |
| Stack Emissions | | | | | | | | |
| Hearth #1 (Stack #12) | 9/18 | 9 | 9 | 6.50 | 33 | 36 | 45 | |
| | | 8.25 | 8 | 6.75 | 36 | 39 | 50 | |
| | | 23 | 22.75 | 21.50 | 40 | 41 | 60 | |
| | | 26.75 | 25.50 | 19.25 | 32 | 36 | 45 | |
| | | 21.75 | 21.75 | 18.75 | 42 | 45 | 70 | |
| | 9/20 | 19.75 | 15.25 | 6.50 | 28 | 35 | 45 | |
| | 9/22 | 18 | 15.25 | 7.75 | 28 | 34 | 50 | |
| | 9/23 | 10 | 10 | 9.75 | 41 | 43 | 60 | |
| | Hearth #2 (Stack #13) | 9/18 | 7.5 | 7.5 | 7.5 | 58 | 58 | 90 |
| | | 9/19 | 16.75 | 14.5 | 12.25 | 42 | 45 | 80 |
| 18.75 | | | 18 | 13 | 31 | 34 | 50 | |
| 9/20 | | 12.25 | 12 | 11.50 | 53 | 55 | 70 | |
| Hearth #5 (Stack #16) | 9/22 | 10 | 10 | 10 | 54 | 54 | 75 | |
| | 9/24 | 10 | 10 | 10 | 43 | 43 | 55 | |
| Hearth #9 (Stack #20) | 9/17 | 28.75 | 18.5 | 11.5 | 29 | 33 | 45 | |
| | | 13.75 | 10.75 | 9 | 34 | 37 | 60 | |
| | | 7.5 | 6 | 5.5 | 45 | 47 | 60 | |
| | 9/18 | 22 | 19.5 | 16.75 | 42 | 45 | 70 | |
| | | 7.25 | 5.75 | 5 | 42 | 45 | 60 | |
| | 9/19 | 17 | 11.25 | 5 | 28 | 36 | 50 | |
| | 9/20 | 14 | 14 | 12.25 | 57 | 61 | 95 | |
| | 9/22 | 11 | 11 | 11 | 53 | 53 | 60 | |
| | Roof Monitors | | | | | | | |
| | Hearth #2 " #4 | 9/17 | 21.25 | 8 | 4 | 28 | 35 | 40 |
| 6.25 | | | 5.25 | 4.25 | 32 | 35 | 80 | |
| " #4 " #6 | 9/18 | 17.50 | 13.25 | 9.75 | 34 | 38 | 50 | |
| | | 25.75 | 24.50 | 18.50 | 44 | 53 | 90 | |
| " #6 | 9/19 | 9 | 6 | 4.75 | 43 | 48 | 80 | |

† Average opacity observed in excess of stated value.

than 1 hour. The process is carried out in a refractory-lined, pear-shaped, open-mouthed furnace mounted on trunnions so that it may be tipped for charging and pouring of melted metal. A typical process flow design is shown in Figure IV-7. Iron from the blast furnace is poured from the hot metal transfer car into the hot metal ladle for subsequent charging into the furnace. Scrap metal up to 30% of the melt weight is also charged into the furnace. Limestone and other fluxes are added. Oxygen is then blown into the furnace at supersonic velocities through a water-cooled lance. This produces an exothermic reaction that releases enough heat to melt the scrap metal without adding fuel. After about 20 minutes of oxygen lancing, the steel has been refined and reaches the desired temperature. Off gases from the furnace are collected in a hood that fits over the mouth of the furnace.

The furnace is tilted and the molten steel is tapped into the teeming table for subsequent ingot casting. Slag remaining in the furnace is then poured into slag ladles and the process cycle can be repeated.

Emission Sources

The major off-gas emissions from the furnace are collected in the hood, cleaned in an ESP and then discharged to the atmosphere through a stack. Emissions can also occur from pressure relief or bypass hatches on the ducts from the furnaces to the ESPs. There are three BOSP furnaces at Fontana, Nos. 1, 2, 3, served by stacks Nos. 21, 22, 23, respectively. Emissions from each ESP can be vented through any of the three stacks.

Various operations in the BOSP building including hot metal re-ladling, charging, tapping, and oxygen lancing of ladles to remove residual metal from the refractory lining produce emission that reach

the atmosphere through roof monitors and other building openings. Some of these emissions are captured by a series of ducts that convey them to the ESP serving furnace No. 3.

Air Pollution Controls

The major off-gas emissions are controlled by large electrostatic precipitators. Partial control of emissions within the building is also achieved by an ESP. A baghouse is scheduled to be installed to control building emissions as discussed in Section V.

Observations

During the survey, furnace No. 2 was not in use. Excessive visible emissions were observed originating from stacks No. 21 and 23 and from roof openings. These observations are summarized in Table IV-8. The emissions were generally rust-red although yellow emissions characteristic of scrap cutting were observed from roof openings on five occasions. The 23 September observation of stack No. 23 was taken when furnace No. 3 was not in operation. This emission thus originated from either furnace No. 1 or from other operations within the building.

Company representatives indicated that visible emissions from the stack could result from several causes. If the ESP was operating cooler or hotter than its design range, or if any of the steam or water sprays in the hood duct were inoperative, continuous emissions could be expected.

Each of the main stacks is equipped with a Bailey Smoke Density Meter and an integrator to measure the total time the emissions exceed 20% opacity.

Table IV-8
SUMMARY OF VISIBLE EMISSION OBSERVATIONS
AT THE BASIC OXYGEN STEEL PROCESS FURNACES

| Emission Source | Date (1975) | Time (min) | | | Avg. Opacity ¹ | | Max. Opacity (%) |
|-----------------------------------|-------------|--------------------|-------|-------|---------------------------|------|------------------|
| | | Observed | >20% | >30% | >20% | >30% | |
| Stack Emissions | | | | | | | |
| Stack #21 | 9/19 | 13.75 | 12 | 11.25 | 40 | 41 | 60 |
| | ++ | 5.25 | 4.5 | 3.75 | 45 | 50 | 60 |
| | 9/22 | 14 | 14 | 12.75 | 58 | 61 | 100 |
| | | 22 | 19.5 | 17.25 | 41 | 42 | 60 |
| | 9/23 | 9 | 5.75 | 3.25 | 30 | 35 | 45 |
| | ++ | 12 | 10 | 8.75 | 47 | 50 | 100 |
| | ++ | 12 | 12 | 7.25 | 33 | 40 | 60 |
| | Stack #23 | 9/19 ⁺⁺ | 14.75 | 13.5 | 11.75 | 83 | 93 |
| | 9/23 | 19 | 15.25 | 4.75 | 27 | 40 | 100 |
| ESP ⁺⁺⁺ Bypass Hatches | | | | | | | |
| | 9/19 | 18.25 | 12.5 | 10 | 51 | 57 | 100 |
| | | 8.25 | 8.25 | 8 | 59 | 60 | 100 |
| | 9/23 | 12 | 10.25 | 8.5 | 54 | 61 | 95 |
| Yellow Smoke Emissions | | | | | | | |
| Roof Openings | 9/17 | 8.75 | 8.5 | 8 | 47 | 49 | 60 |
| | | 13.5 | 13.5 | 13 | 42 | 43 | 55 |
| | | 11.75 | 10.5 | 9.5 | 42 | 45 | 65 |
| | 9/18 | 14.75 | 14.5 | 12.75 | 49 | 53 | 85 |
| | | 7.5 | 7.5 | 7.5 | 54 | 55 | 85 |
| | | | | | | | |
| White and Rust Emissions | | | | | | | |
| Roof Openings | 9/17 | 16 | 12 | 7.75 | 44 | 65 | 80 |
| | | 5.25 | 5.25 | 4.75 | 38 | 39 | 45 |

⁺ Average opacity observed in excess of stated value.

⁺⁺ Upset Condition reported to the San Bernardino County Air Pollution Control Zone.

⁺⁺⁺ Electrostatic precipitator.

Examination of the smoke density recordings [Figs. IV-8, IV-9] indicates that emissions from stack No. 23 varied only slightly and were within acceptable opacity limits on both days illustrated, 20-21 September. The charts also show that the meters are kept in good repair since they continue to return to a 2% minimum, indicative of routine maintenance and the use of a live zero. On the other hand, similar charts for stack No. 21 [Figs. IV-10, IV-11] show that emissions from this stack were in excess of the Rule 50A limitation for about six periods each day. This is probably indicative of poor operation or maintenance of the ESP, but it is also directly related to the cyclical operation of the BOSP furnace.

Reddish-brown emissions were observed when leaks occurred at the seals on the pressure relief or bypass hatches mounted on the roof in the exhaust stream from the furnace to the ESP. This occurred when the hatches were not closed and sealed properly. These emissions were related to the cyclical operations of the furnaces. Visible emissions in the building were also observed during charging and tapping operations.

The most significant visible emissions within the BOSP furnace building that eventually reached the atmosphere through roof openings resulted from hot metal reladling and lancing of ladles. Emissions were produced when molten iron was poured from the hot metal transfer car into the hot metal ladle at the reladling station. Emissions also resulted when ladles were lanced as part of regular maintenance to remove metal deposits remaining on the refractory lining. Both activities produced emissions that appeared to far exceed those produced by charging and tapping operations.

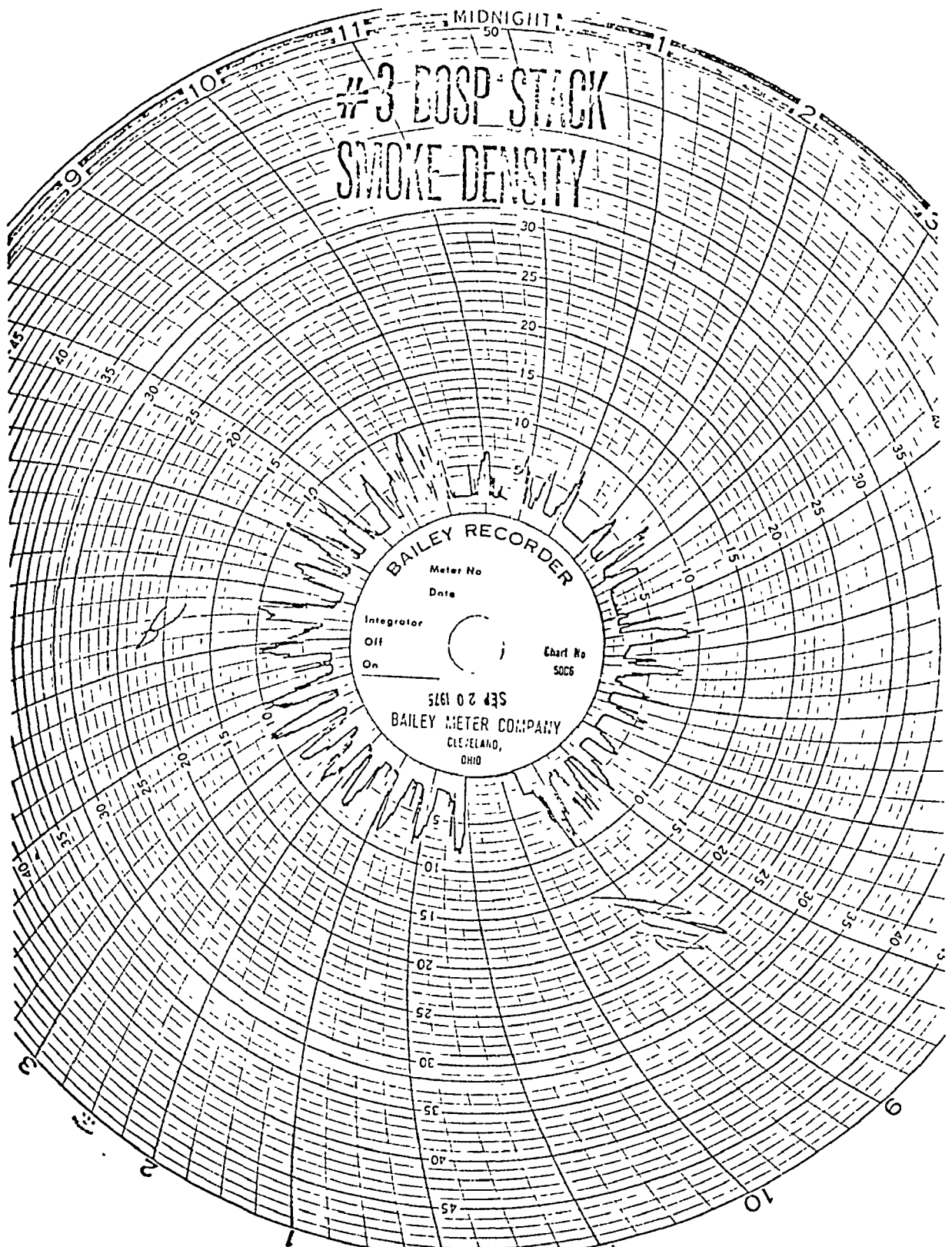


Figure IV-8. Smoke Density Readings-Stack No. 23, 20 September 1975

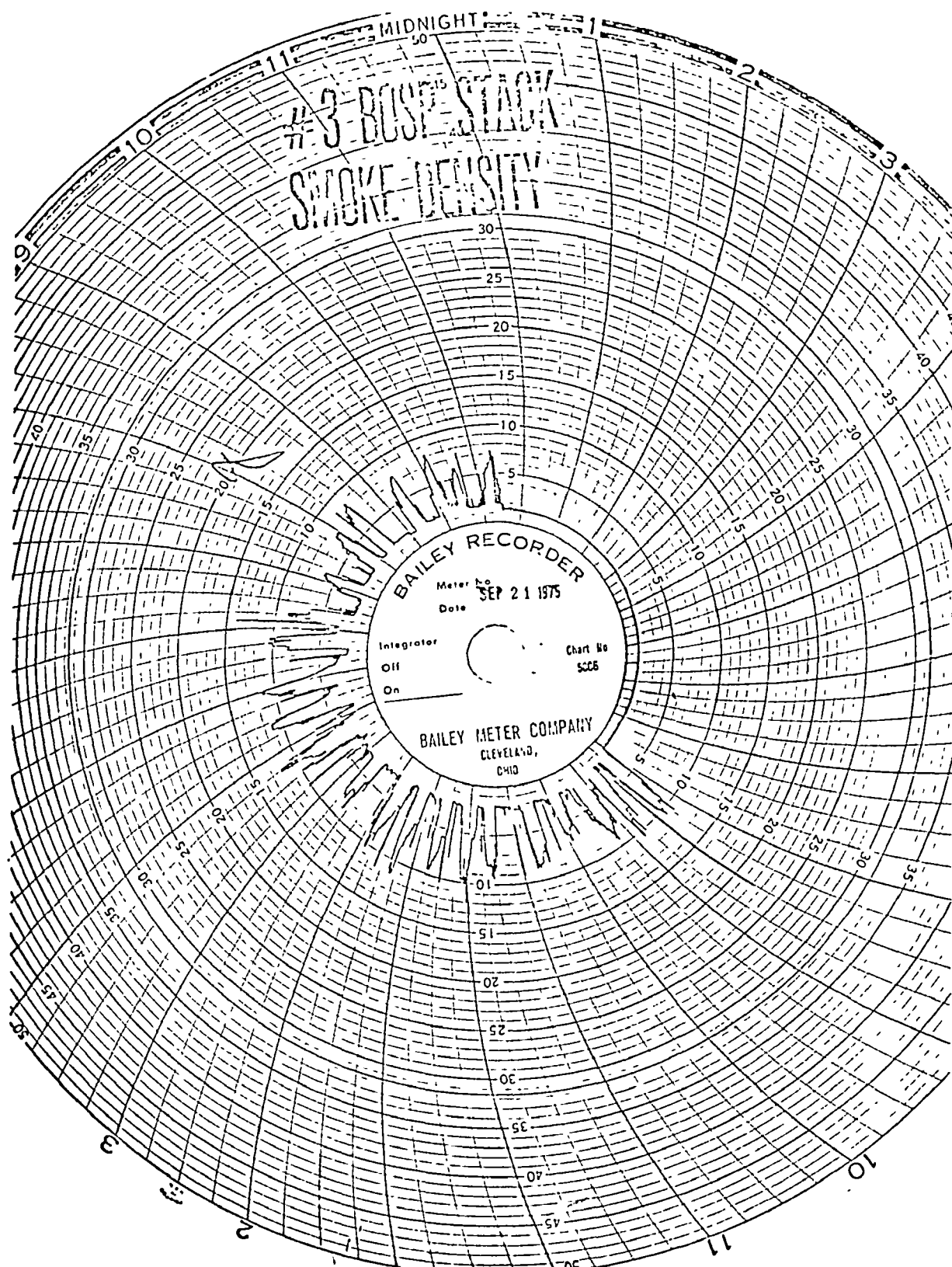


Figure IV-9. Smoke Density Readings-Stack No. 23, 21 September 1975

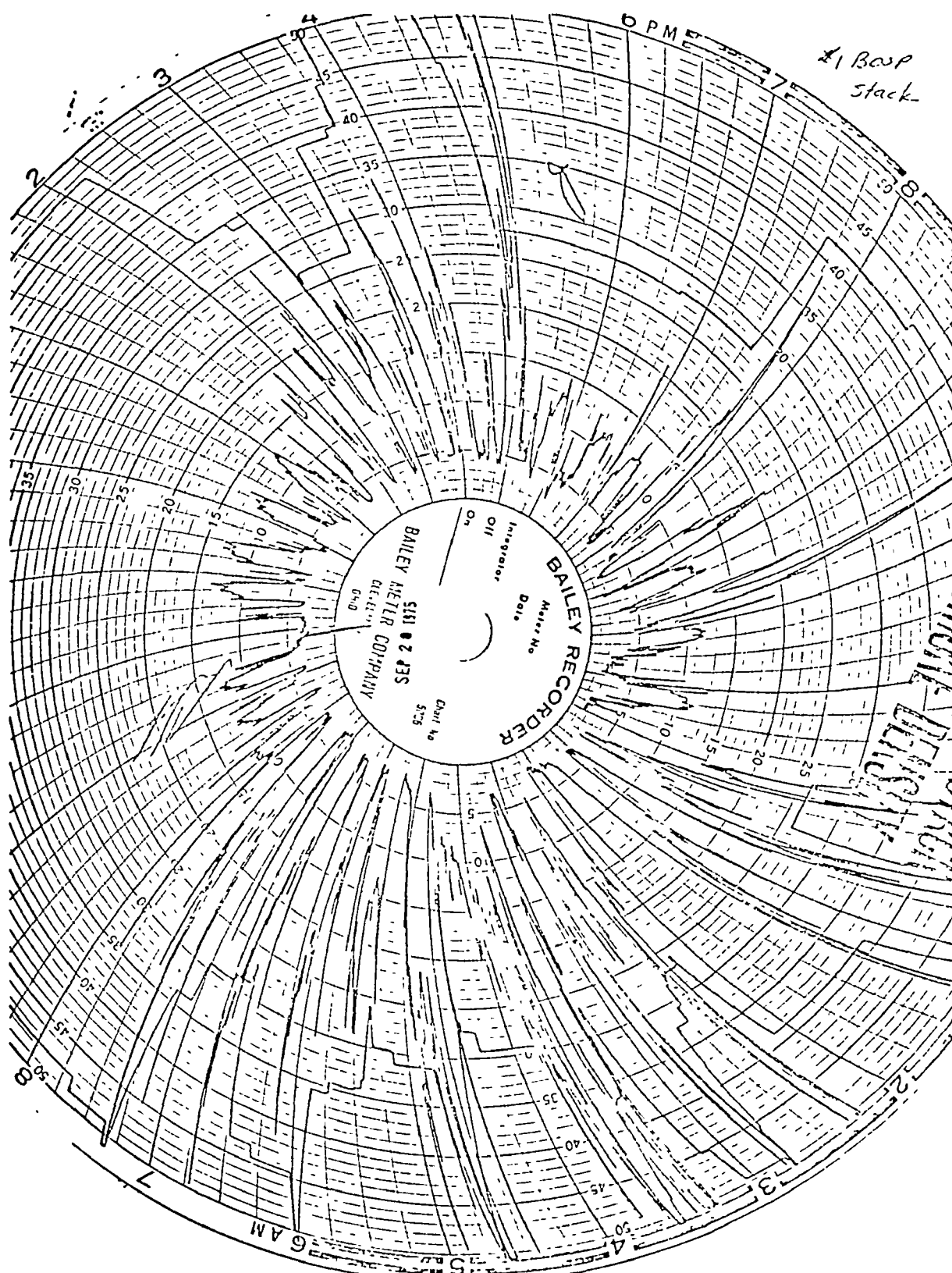


Figure IV-10. Smoke Density Readings-Stack No. 21, 20 September 1975

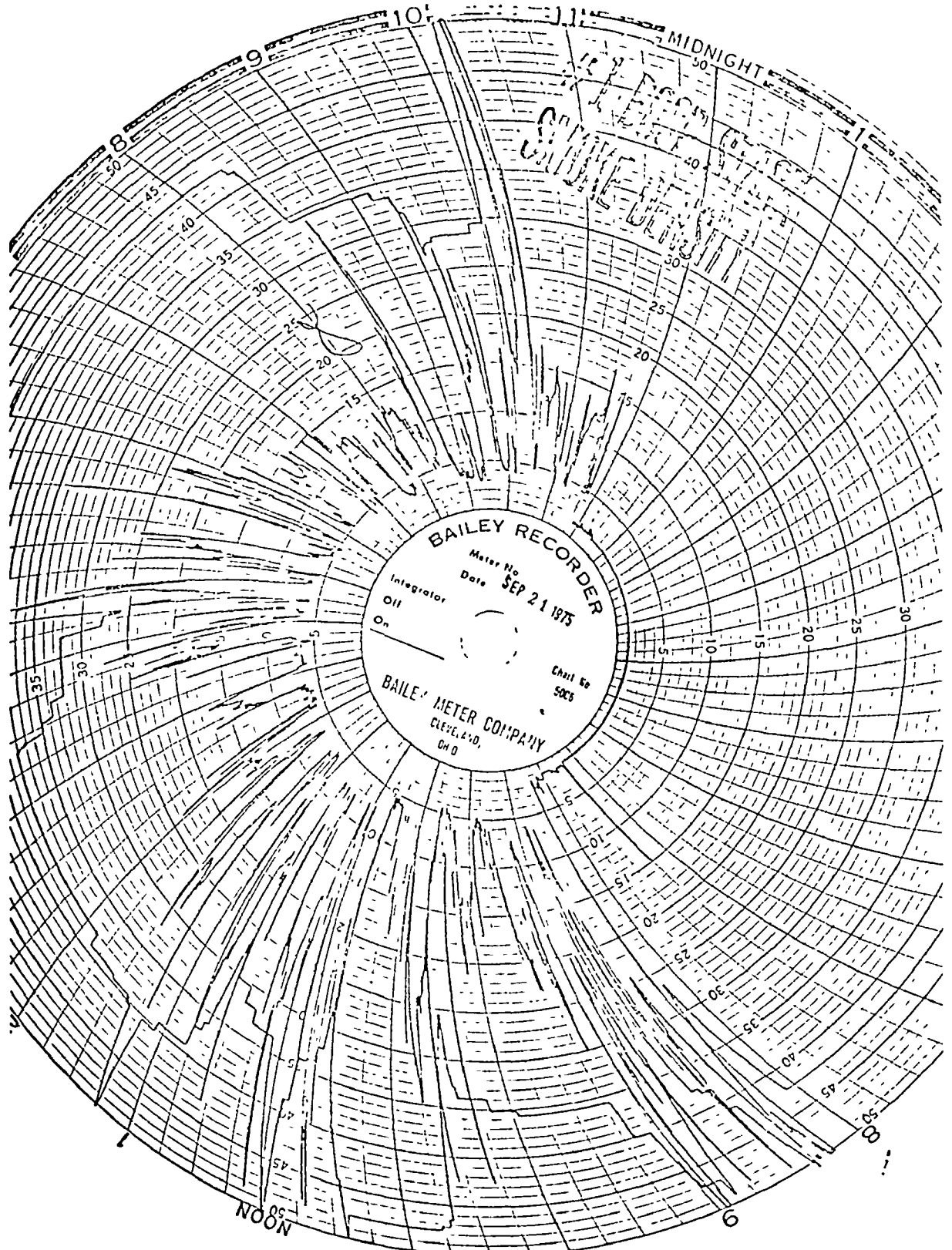


Figure IV-11. Smoke Density Readings-Stack No. 21, 21 September 1975

ROLLING MILL SOAKING PITS

Basic Process

Steel ingots from the BOSP or open hearth furnaces must be passed through hot forming processes before they can be converted to finished steel products. The ingots are heated in special furnaces called soaking pits before they are fed to the primary rolling mills for forming into intermediate forms such as slabs, blooms and billets. Coke oven gas or natural gas is usually burned in the pits with combustion gases and exhausted to the atmosphere through furnace stacks.

Emission Sources

There are 38 soaking pits serving the rolling mills at Fontana. Each pair of soaking pits is served by a single 34 m (110 ft) tall stack. Stack locations and designations are shown in Figure IV-2 and listed in Table IV-3.

Air Pollution Controls

There are no air pollution controls on soaking pit emissions.

Observations

Excessive visible emissions were observed from six of the soaking pit stacks [Table IV-9]. The emissions were gray to black and resulted from improper fuel combustion. Because of the location of the stacks with respect to the rolling mill buildings, many were virtually impossible to observe from ground level while meeting EPA Method 9 requirements.

Table IV-9
SUMMARY OF VISIBLE EMISSION OBSERVATIONS
AT ROLLING MILL SOAKING PITS

| Emission Source | Date (1975) | Time (min) | | | Avg. Opacity [†] | | Max. Opacity (%) |
|-----------------|-------------|------------|-------|------|---------------------------|------|------------------|
| | | Observed | >20% | >30% | >20% | >30% | |
| Stack No. | | | | | | | |
| 33 | 9/17 | 6 | 6 | 5.5 | 38 | 39 | 50 |
| 37 | | 31 | 30.25 | 30 | 56 | 57 | 60 |
| 40 | | 12.75 | 11 | 3.25 | 25 | 32 | 35 |
| 37 | 9/18 | 10 | 10 | 10 | 58 | 58 | 85 |
| 31 | 9/19 | 19.25 | 16.5 | 8.5 | 27 | 32 | 40 |
| 41 | 9/20 | 18.5 | 16.5 | 6.75 | 26 | 31 | 35 |
| 43 | | 11 | 9 | 3.75 | 26 | 31 | 35 |
| 43 | 9/22 | 9 | 9 | 9 | 45 | 45 | 55 |

† Average opacity observed in excess of stated value.

HOT STRIP MILL

Basic Process

Hot strip mills reduce slabs formed from ingots in primary rolling mills to flat strip steel generally less than 30 cm (12 in) thick. The slabs are heated in reheating furnaces and then conveyed to a rolling train for forming and finishing to size. The furnaces heat the slabs to a temperature of about 1,100° to 1,300°C (2,010° to 2,370°F). Coke oven gas or natural gas is generally used to fire the furnaces.

Emission Sources

The 218 cm (86 in) hot strip mill has three reheat furnaces (Nos. 1, 2, 3). Each furnace is served by a 46 m (150 ft) tall stack. Furnace No. 1 is served by stack No. 58, furnace No. 2 by stack No. 57

and furnace No. 3 by stack No. 56. With the exception of minor emissions released to the hot strip mill building when slabs are removed from the furnace, all combustion products are exhausted to the atmosphere through the stacks.

Air Pollution Controls

Emissions from the stacks are monitored by Bailey Smoke Meters set to sound an alarm whenever the opacity exceeds 10%. This reportedly permits sufficient time for operating personnel to adjust the combustion characteristics of the furnace before emissions exceed the 20% opacity limit. The stack emissions are not visible from within the mill; thus the need for the automatic alarm. There are no other air pollution controls on the furnaces.

Observations

On 23 September, excessive visible emissions were observed from stack No. 57 serving Furnace No. 2 when the alarm failed to operate. Emissions exceeded the 30% limit for 10 minutes during the period of observation. The maximum opacity observed was 60%, with a 49% average.

SCRAP CUTTING

Basic Process

Basic iron and steel production processes and the finishing mills generate scrap iron and steel that can be recycled through the steel making process without waste. This scrap ranges in size from large ladle "skulls" to small sheet scraps. Scrap steel is also imported

to the plant from other locations. The large pieces must be cut or broken into smaller sizes before they can be charged into the basic oxygen and open hearth furnaces. This can be accomplished by cracking the pieces by impacting with a large steel ball, by shearing plates or more commonly by cutting with gas torches. When torches are used for cutting ingots and other thick scrap, visible emissions in the form of yellow-brown or green smoke are released to the atmosphere.

Emission Sources

The major scrap cutting operation is conducted in the open on the east side of plant property. On several occasions, scrap cutting was observed at other locations on plant property. For these open air operations, the smoke is released directly to the atmosphere. Scrap cutting inside buildings produces emissions that are released to the atmosphere through roof monitors.

Air Pollution Controls

There are no air pollution controls for the scrap cutting operations.

Observations

Excessive visible emissions from scrap cutting operations were observed on several occasions at both the main scrap area and south of the BOSP area. These are summarized in Table IV-10.

Table IV-10
SUMMARY OF VISIBLE EMISSION OBSERVATIONS
AT SCRAP CUTTING AREAS

| Emission Source | Date (1975) | Time (min) | | | Avg. Opacity [†] | | Max. Opacity (%) |
|-----------------|-------------|------------|------|------|---------------------------|------|------------------|
| | | Observed | >20% | >30% | >20% | >30% | |
| South of BOSP | 9/17 | 9.25 | 7.5 | 5.75 | 34 | 37 | 50 |
| | | 9 | 7.5 | 6.75 | 57 | 61 | 80 |
| Main Area | 9/18 | 18.25 | 10 | 6.5 | 37 | 45 | 75 |
| | | 19.50 | 10.5 | 9.25 | 46 | 49 | 80 |
| | | 11.75 | 10 | 9.5 | 52 | 54 | 80 |
| | | 13.25 | 7.5 | 6.75 | 44 | 46 | 80 |
| | 9/19 | 28 | 20 | 18 | 56 | 60 | 90 |
| | | 9.5 | 9.5 | 9.5 | 79 | 79 | 95 |

† Average opacity observed in excess of stated value.

V. ANALYSIS OF THE STATUS OF COMPLIANCE WITH THE CONSENT ORDER

On 11 July 1974, the EPA and the Kaiser Steel Corporation entered into a Consent Order (Docket No. 9-74-9) under which the Company agreed to an implementation plan and schedule for reducing air pollution from that facility. This Order was revised on 11 November 1974 to adjust intermediate increments to Appendix E of the Order without affecting final compliance dates. The Order included these six Appendices dealing with various processes at the plant:

- A Coke Oven Battery Stacks
- B Coke Oven Batteries
- C Basic Oxygen Steel Processing Shop
- D Open Hearth Furnace Stacks
- E Scrap Metal Cutting Operation
- F Desulfurization of Coke Oven Gas

Subsequent to this revision, the Company proposed a \$150 million Steelmaking Modernization Project contingent upon securing financial commitments and obtaining the necessary concurrence and permits from regulatory agencies. This plan would extend the compliance dates of portions of the air quality control program past those contained in the Consent Order.

On 17 September 1975 progress toward compliance with the Consent Order was discussed with a representative of the Company. Present were:

Mr. John H. Smith, Director, Environmental Quality Control,
Kaiser Steel Corporation
Ms. Lois E. Green, Enforcement Division, EPA-Region IX
Dr. Jules B. Cohen, EPA-NEIC
Mr. Karl Krause, California Air Resources Board

Information obtained during that discussion is contained below. Every milestone in each Appendix to the Order to date has been listed, followed by Company progress in meeting that milestone.

EVALUATION OF APPENDIX A REQUIREMENTS

The Kaiser Steel Corporation, Steel Manufacturing Division, shall complete the following acts with respect to its coke oven battery stacks, listed below, on or before the dates specified:

A. "A" Battery Stack.

- (1) *1 November 1974 - submit progress report on status of research and development program.*

By letter dated 30 October 1974 the Company transmitted "TRW Systems Group Progress Report No. 15" prepared for EPA. TRW is conducting a research and development program on a Charged Droplet Scrubber for Fine Particle Control. The pilot plant portion of the program included a proposal to process one-half the normal output of "A" Battery stack at the Kaiser coke ovens.

- (2) *1 May 1975 - submit final control plan.*

The Corporation submitted a control plan on 10 June 1975 confirming the system in (1) above. But the plan only addressed installation of the prototype unit designed to process up to half the normal capacity of the stack. A submittal on 23 April 1975, including drawings of the unit, did not meet the requirements of the Order. The Company was so advised on 23 May 1975.

- (3) *1 July 1975 - let contracts for the purchase of control equipment or process modification.*

On 25 June 1975 the Company advised they had let a contract for purchase of the Charged Droplet Scrubber and for installation of the unit. However, the only contract that had been let at that time was a contract from TRW to Kaiser Steel for installation of the prototype Charged Droplet Scrubber.

The Consent Order has no requirements to date; however, the Kaiser Steel Modernization Program proposes to extend the EPA compliance date of 31 December 1977 until 31 December 1978 on two stacks, and 30 June 1980 on the remaining three stacks. This assumes the success of the

TRW project discussed above. Should this not be successful, a Wet Precipitrol by Fluid Ionics would be considered; however, this could extend dates even further.

EVALUATION OF APPENDIX B REQUIREMENTS

The Kaiser Steel Corporation, Steel Manufacturing Division, shall complete the following acts with respect to its coke oven operations on or before the dates specified:

- A. Pushing and charging operations at each coke oven in coke Batteries "A", "B", "C", "D", "E", "F" and "G". For the purposes of this paragraph, visible emissions from the pushing and charging operations at each coke oven shall be combined for determining interim compliance as required by sub-paragraph (5).

(1) 31 July 1974 - submit approvable operating and maintenance program. Either certify compliance as required by sub-paragraph (5) or submit final control plan.

By letter dated 30 July 1974 the Company submitted an operating and maintenance program and certified compliance with San Bernardino County Air Pollution Control District (SBAPCD) Regulation IV, Rules 50 and 50A. The above action precluded the necessity for further activity under this paragraph.

- B. Coke oven doors and standpipes at each coke oven in coke oven Batteries "C", "D", "E", "F" and "G". For purposes of this paragraph, visible emissions from the doors and standpipes at each coke oven shall be combined for determining interim compliance as required by sub-paragraph (5).

(1) 31 July 1974 - submit approvable operating and maintenance program. Either certify compliance as required by sub-paragraph (5) or submit final control plan.

By letter dated 30 July 1974 the Company submitted an operating and maintenance program and certified compliance with San Bernardino

County Air Pollution Control District Regulation IV, Rules 50 and 50A. The above action precluded the necessity for further activity under this paragraph.

- C. Coke oven doors and standpipes at each coke oven in coke oven Batteries "A" and "B". For the purpose of this paragraph, visible emissions from the doors and standpipes at each coke oven shall be combined for determining interim compliance as required by sub-paragraph (6).

- (1) *31 July 1974 - submit approvable final control plan to include installation of new doors as well as operating and maintenance program.*

A final control plan to replace all doors on "A" and "B" Batteries was submitted on 30 July 1974. The operation and maintenance program was included in the A(1) submittal above.

- (2) *30 August 1974 - let contracts for the purchase of control equipment or process modification.*

On 4 September 1974 the Company advised that contracts were awarded for new coke oven doors.

- (3) *30 September 1974 - commence on-site construction or installation of control equipment or process modification.*

The Company did not certify to completion of this increment of progress.

- (4) *31 December 1974 and 30 June 1975 - submit progress report.*

Progress reports were submitted on the dates required. The report of 30 June 1975 indicated no foreseeable problem in meeting the compliance schedule.

- D. Such approvable operating and maintenance programs as are required by paragraphs A, B and C above, shall be incorporated into and made a part of this Order.

No action required.

- E. Program designed to bring combined visible emissions from pushing and charging operations, doors and standpipes at each coke oven in coke oven Batteries "A", "B", "C", "D", "E", "F" and "G" into compliance with San Bernardino County Air Pollution Control District Regulation IV, Rules 50 and 50A.

- (1) 31 August 1974 - submit plan for engineering studies.

A plan for conducting engineering studies, prepared by Battelle, Columbus Laboratories, was submitted on schedule.

- (2) 31 December 1974 - submit progress report on status of engineering studies.

The Corporation advised that Battelle had completed the first portion of their report to EPA on 30 December 1974. On 26 March 1975, Kaiser submitted the Battelle report to EPA. The report, dated 31 December 1974 was a state-of-the-art review on control of emissions from coke ovens.

- (3) 31 July 1975 - submit results of engineering studies and either certify compliance as defined above with San Bernardino County Air Pollution Control District Regulation IV, Rules 50 and 50A, or submit an approvable final control plan reflecting the state-of-the-art in technology to achieve compliance. Such approvable control plan shall be incorporated into and made a part of this Order.

On 30 July 1975 the Corporation submitted the final portion of the Battelle study resulting from field trips to a number of steel companies throughout the country. The San Bernardino Air Pollution Control Officer has indicated by letter (6 August 1975) to the corporation that the report contained certain errors and drew some incorrect conclusions.

The transmittal of 30 July 1975 did not certify compliance nor did it contain an approvable final control plan as required.

EVALUATION OF APPENDIX C REQUIREMENTS

The KAISER Steel Corporation, Steel Manufacturing Division, shall complete the following acts with respect to its basic oxygen steel processing shop building on or before the dates specified:

- A. Charging and tapping operations at furnaces No. 1 and 3.
15 October 1974 - achieve compliance with San Bernardino County Air Pollution Control District Regulation IV, Rules 50 and 50A.

On 18 October 1974 Kaiser Steel advised that the required increment of progress regarding the charging and tapping operation had been completed. They did not certify to compliance with SBAPCD Regulation IV, Rules 50 and 50A as required.

B. Hot metal transfer operation*.

(1) 31 December 1974 - submit final control plan.

The Company submitted an engineering drawing depicting the bag-house and ductwork location with some details, in fulfillment of this requirement.

(2) 15 February 1975 - let contracts for purchase of control equipment or process modification.

On 18 February 1975 Kaiser advised that contracts had been let as required. Kaiser stated that delivery was not possible until January 1976 and requested an extension of the final compliance date from 15 December 1975 until 31 July 1976.

(3) 1 May 1975 - commence on-site construction or installation of control equipment or process modification.

Kaiser Steel advised the Agency on 8 May 1975 that on-site preparation and installation of utilities had begun in order to comply with this increment. The final compliance date has not yet been extended by the Agency.

EVALUATION OF APPENDIX D REQUIREMENTS

The Kaiser Steel Corporation, Steel Manufacturing Division, shall complete the following acts with respect to its open hearth furnace stacks Nos. 1, 2, 4, 5, 6, 7, 8, and 9, on or before the dates specified:

* For purposes of Appendix C, the hot metal transfer operation at the basic oxygen steel processing shop shall include the hot metal transfer station which results in emissions from the sides and roof monitors of the basic oxygen steel processing shop building. The hot metal transfer station includes pouring of molten pig iron from torpedo cars into ladles which carry the molten iron to the basic oxygen furnaces.

- (1) *31 July 1974 - submit final control plan for upgrading of existing electrostatic precipitators as well as an operating and maintenance program therefor and for the construction of additional control equipment (electrostatic precipitators).*

On 24 July 1974 the Corporation submitted a final control plan which included modifications to the precipitators, included an operation and maintenance (O&M) program, and called for installation of a balloon flue between the furnaces and precipitators to average the flow.

- (2) *30 November 1974 - let contracts for the purchase of control equipment or process modification. Continue to upgrade existing electrostatic precipitators and implement operating and maintenance program as required by Decision No. 86-D of the Hearing Board, Air Pollution Control District, County of San Bernardino, California, which is incorporated into and made a part of this Appendix.*

On 14 November 1974 Kaiser Steel requested a revision in the compliance date to 21 December 1974. This was followed on 4 December by a letter advising that the increment of progress had not been met. After a meeting on 7 January 1975 at the EPA offices, the Agency could find no justification for a delay. Kaiser Steel was advised on 17 January 1975 that they were in violation of the Order and must let contracts forthwith.

- (3) *15 May 1975 - complete construction or installation of all process modifications as required by the Decision referenced in subparagraph (2) above.*

The Corporation certified completion of all construction and process modifications required by Decision No. 86-D of the Hearing Board, SBAPCD, on 21 May 1975.

- (4) *1 September 1975 - commence on-site construction or installation of additional control equipment.*

The date was not met. Instead, the Company has proposed their Steelmaking Modernization Program which includes two new basic oxygen steel furnaces. These furnaces would replace five open hearth furnaces, leaving two in operation and one for standby. The open hearth furnaces would be operated at reduced rates so as not to exceed existing precipitator capacity.

The Kaiser Steel plan calls for a final compliance date of 31 December 1978, 17 months later than required by the Consent Order.

EVALUATION OF APPENDIX E REQUIREMENTS

The Kaiser Steel Corporation, Steel Manufacturing Division, shall complete the following acts with respect to its scrap metal cutting operation on or before the dates specified:

- (1) *31 July 1974 - submit final control plan to include a building enclosure and baghouse.*

The Company submitted design drawings of a scrap cutting building with baghouse control on 24 July 1974.

- (2) *30 September 1974 - let contract for purchase of building and control equipment (baghouse). Commence off-site fabrication of building and control equipment (baghouse).*

On 4 October 1974 the Company advised that they had "initiated contract awards" for the scrap cutting operation. As stated, this did not indicate that the contract had been let as required by the Consent Order. This was clarified on 28 October 1974 when the Company indicated awarding contracts for fabrication of the building and for design and fabrication of a baghouse.

- (3) *1 April 1975 - commence on-site construction or installation of building and control equipment (baghouse).*

No certification was received; this date was missed. The Company indicated by letter of 24 March, 1975 that they would not erect a building and baghouse for this facility. The Company was advised by the agency on 15 May 1975 that they were in violation of this provision of the Consent Order.

A new proposal is included in the Steelmaking Modernization Program. By 5 October, machine torch cutting devices were anticipated to be in place, along with a ball drop facility. Compliance by this

facility will take advantage of the increased size of the charging boxes on the oxygen furnaces that have been proposed. However, the anticipated completion date for those is 31 December 1978, 31 months after the compliance date in this Order.

The Company anticipates that using the machine torches will reduce emissions enough to negate the requirement for a building and the necessary air pollution control equipment. However, while the torches and ball drop facility will process an estimated 13,970 m. tons (15,400 tons)/month, an additional 9,070 m. tons (10,000 tons)/month remains to be processed by as yet undetermined means.

EVALUATION OF APPENDIX F REQUIREMENTS

The Kaiser Steel Corporation, Steel Manufacturing Division, shall complete the following acts with respect to the sulfur content of its coke oven gas on or before the dates specified:

- (1) *31 October 1974, 30 April 1975, and 30 September 1975 - submit progress reports on status of the research and development program.*

Progress reports regarding similar installations at other steel plants were submitted on 30 October 1974 and 30 April 1975.

The Company is considering two alternative processes for desulfurization, the Firma Karl Still and the Sulfiban Process, but a decision has not been made to date.

While the Consent Order requires a final compliance date of 31 December 1977, the Steelmaking Modernization Program is suggesting 30 June 1981 for achieving compliance with SBAPCD Regulation IV, Rule 62.

DISCUSSION

Review of the Consent Order documentation, coupled with in-plant

observations and VEO's, indicates that the Kaiser Steel Corporation has made progress in air pollution control at the plant but still has much to accomplish.

Analysis of the documentation required by the Consent Order indicated that in some cases the Corporation submitted plans which they did not follow. Thus, they submitted plans for (1) modifying the ESP's on the open hearth furnaces, which they now propose to eliminate through the Steelmaking Modernization Program, and (2) for a scrap metal cutting building which they now plan to negate by use of machine cutting torches which may or may not be effective.

A major problem appears to be that those certifying compliance at Corporate headquarters are not those complying at Fontana. Thus, compliance will be elusive and certification meaningless unless: (1) plant employees in the shops comprising the steel making operation are aware of the necessity for following O&M procedures, submitted as a requirement of the Consent Order to control air pollution, and (2) plant employees are advised of Corporate determination to comply with Federal, State and local requirements. For example, O&M programs have been submitted for coke oven Batteries "C" through "G" (Appendix B, Part B) and "A" and "B" (Appendix B, Part C); yet the field study documented numerous door leaks, including 29 VEO's that recorded excessive emissions from doors and two VEO's that showed excessive emissions from standpipes. If observations had been made from top-side, additional excessive emissions from standpipes would have been documented.

Without rigid requirements for the O&M necessary to bring individual portions of the coke oven door emission problem under control, it will certainly be impossible to bring combined emissions from pushing and charging operations, door and standpipes into compliance. Thus, even if pushing and charging operations can be

modified to curtail emissions to within the 3-minute limitation, leaking standpipes, doors or charge ports (operating and maintenance problems) will negate this effort.

The survey also indicated air pollution contributions from facilities that were not covered by the Consent Order. Most of these could be improved by additional instrumentation or by better O&M procedures, but some need air pollution control equipment or a combination of these methods. Excessive visible emissions were recorded from blast furnace cast house roofs and stove draft stacks (8), from the ESP stacks of the basic oxygen steel furnaces (9), and from the soaking pits (8). Only those indicated earlier were reported as emergencies, so others must be considered as routine.

In the case of the basic oxygen steel furnace, it would appear that with three ESP's available and only two furnaces operating, generally not concurrently, that sufficient ESP capacity is available to control these emissions.

Since soaking pit stacks are probably not visible from within the facility, smoke detectors with alarms could indicate when fuel mixtures must be adjusted. This approach has been used successfully at other locations at the plant.

In the absence of Federal scrutiny in these areas, Complaint Citations issued by the SBAPCD against those sources not covered by APCD variances may provide some impetus for control. However, with nominal assessments this may not be the case.

APPENDIX

VISIBLE EMISSION OBSERVATION RECORD

VISIBLE EMISSION OBSERVATION RECORD

Company _____

Date _____ Time First Sighted Plume _____

Time Start _____ Time Stop _____

Air Temperature _____ Relative Humidity _____

Wind Speed _____ Wind Direction _____

Sky Condition _____ Background _____

Plume Characteristics: Continuous: () yes () no

Color _____ Dispersion Description _____

Stack Height _____ (ft) Observer location: _____ (ft) _____ of stack

Sun location

() Back of Observer

() Left Shoulder

() Right Shoulder

() Other

Emission Point _____

| Min | 0 | 15 | 30 | 45 |
|-----|---|----|----|----|
| 01 | | | | |
| 02 | | | | |
| 03 | | | | |
| 04 | | | | |
| 05 | | | | |
| 06 | | | | |
| 07 | | | | |
| 08 | | | | |
| 09 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |

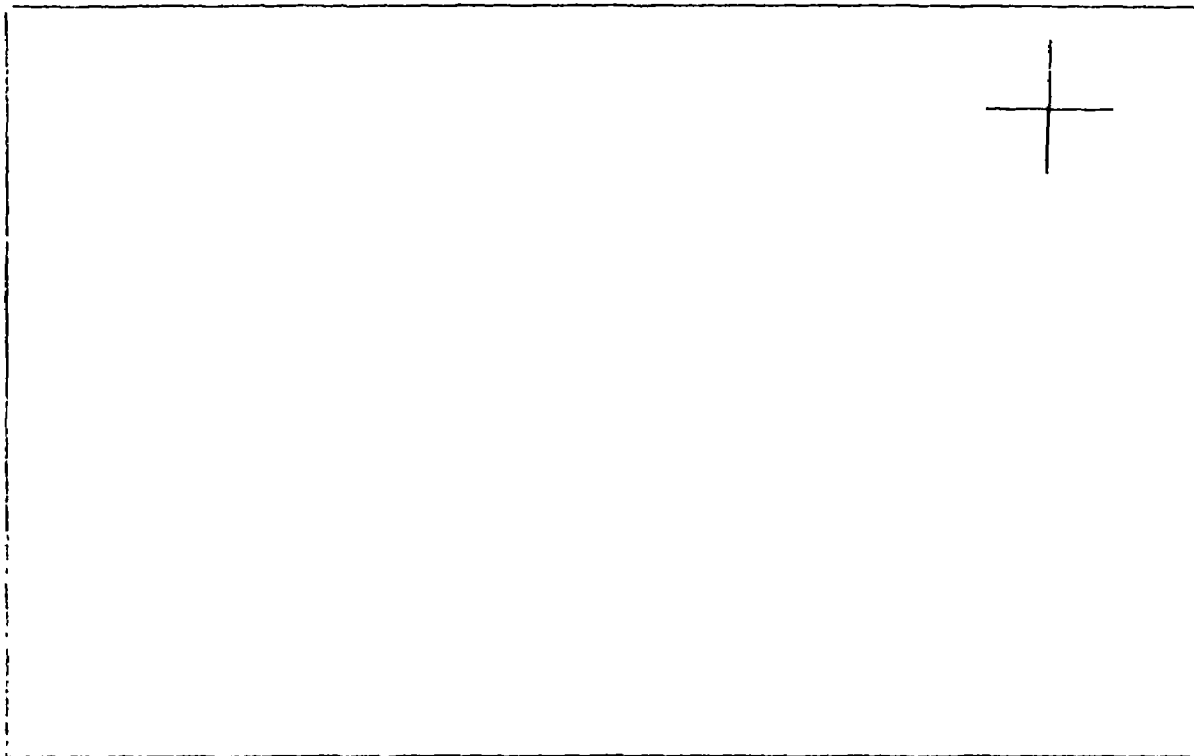
| Min | 0 | 15 | 30 | 45 |
|-----|---|----|----|----|
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |

| Min | 0 | 15 | 30 | 45 |
|-----|---|----|----|----|
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |
| 44 | | | | |
| 45 | | | | |
| 46 | | | | |
| 47 | | | | |
| 48 | | | | |
| 49 | | | | |
| 50 | | | | |
| 51 | | | | |
| 52 | | | | |
| 53 | | | | |
| 54 | | | | |
| 55 | | | | |
| 56 | | | | |
| 57 | | | | |
| 58 | | | | |
| 59 | | | | |
| 60 | | | | |

NOTES: _____

Inspector _____ Date _____

MAP



Symbols

Sun = ~~☼~~

Plume direction = -->

Point where plume observed =

Observer = ~~☼~~

Water Vapor Condensate _____

Photographs: S&A File () Enclosed () None ()

Comments _____

Signature _____ Date _____

AN INVENTORY OF CARCINOGENIC
SUBSTANCES RELEASED INTO THE
AMBIENT AIR OF CALIFORNIA

THIS IS THE ONLY
PRINTED BY RICH ZISKIND



KVB 26900-836

FINAL REPORT - TASK II & IV

CONTRACT NO
1-068-32-221-12

PREPARED FOR:
SCIENCE APPLICATIONS, INC
LOS ANGELES, CALIFORNIA

PREPARED BY:
R.M. ROBERTS
KVB, INC
ENERGY & ENVIRONMENTAL SYSTEMS
MARCH 1980

A Research-Cottrell Company

17332 IRVINE BLVD., TUSTIN, CALIFORNIA 92680 • (714) 832-9020
HOUSTON, TX (713) 780-8316 • MINNEAPOLIS, MN (612) 545-2142 • HARTSDALE, NY (914) 949-6200

AN INVENTORY OF CARCINOGENIC SUBSTANCES RELEASED
INTO THE AMBIENT AIR OF CALIFORNIA

TASK II

CONTRACT No. 1-068-32-221-12

PREPARED FOR
SCIENCE APPLICATIONS, INC.
LOS ANGELES, CALIFORNIA

PREPARED BY
KVB, INC.
A RESEARCH-COTTRELL COMPANY



MARCH 1980

CONTENTS

| <u>Section</u> | | <u>Page</u> |
|----------------|---|-------------|
| 1.0 | INTRODUCTION | 1-1 |
| 2.0 | SUMMARY OF FINDINGS AND CONCLUSIONS | 2-1 |
| 2.1 | Accuracy of Findings | 2-1 |
| 2.2 | Magnitude of Pollution | 2-2 |
| 2.3 | The Principal "Hot Spots" | 2-3 |
| 2.4 | Pollution Significance of the Individual Materials | 2-7 |
| 2.4.1 | Arsenic | 2-7 |
| 2.4.2 | Asbestos | 2-8 |
| 2.4.3 | Benzene | 2-9 |
| 2.4.4 | Cadmium | 2-10 |
| 2.4.5 | Carbon Tetrachloride | 2-11 |
| 2.4.6 | Chloroform | 2-11 |
| 2.4.7 | Ethylene Dibromide | 2-12 |
| 2.4.8 | Ethylene Dichloride | 2-12 |
| 2.4.9 | Nitrosamines | 2-13 |
| 2.4.10 | Perchloroethylene | 2-14 |
| 2.4.11 | Polycyclic Organic Material | 2-14 |
| 3.0 | INVENTORY FINDINGS | 3-1 |
| 3.1 | Arsenic | 3-1 |
| 3.1.1 | Occurrence and Release Summary | 3-1 |
| 3.1.2 | Emission Factors | 3-4 |
| 3.2 | Asbestos | 3-24 |
| 3.2.1 | Production-Usage Summary | 3-24 |
| 3.2.2 | Emission Factors | 3-27 |
| 3.3 | Benzene | 3-36 |
| 3.3.1 | Summary of Utilization and Releases | 3-36 |
| 3.3.2 | Benzene Production and Major Uses | 3-37 |
| 3.3.3 | Coking Operations | 3-40 |
| 3.3.4 | Petroleum Production, Storage and Marketing | 3-41 |
| 3.3.5 | Automobile and Other Vehicular Traffic | 3-42 |
| 3.3.6 | Solvent Operations and Other Miscellaneous Sources of Benzene Emissions | 3-42 |
| 3.3.7 | Emission Factors | 3-45 |
| 3.3.8 | Ambient Benzene Levels | 3-60 |

CONTENTS (Continued)

| <u>Section</u> | <u>Page</u> |
|--|-------------|
| 3.4 Cadmium | 3-61 |
| 3.4.1 Summary of Utilization and Releases | 3-61 |
| 3.4.2 Steel Production | 3-62 |
| 3.4.3 Coal Consumption | 3-63 |
| 3.4.4 Automobile Emissions | 3-64 |
| 3.4.5 Secondary Zinc Smelters | 3-65 |
| 3.4.6 Secondary Copper and Copper Alloy Smelters | 3-65 |
| 3.4.7 Cadmium Emission Factors | 3-65 |
| 3.5 Carbon Tetrachloride | 3-72 |
| 3.5.1 Summary of Production and Usage | 3-72 |
| 3.5.2 Emission Factors | 3-78 |
| 3.6 Chloroform | 3-80 |
| 3.6.1 Summary of Distribution and Usage | 3-80 |
| 3.7 Ethylene Dibromide | 3-82 |
| 3.7.1 Production-Usage Summary | 3-82 |
| 3.7.2 EDB Use in Gasoline | 3-82 |
| 3.7.3 EDB Use in Pest Control | 3-87 |
| 3.7.4 EDB Use in Other Applications | 3-91 |
| 3.7.5 Emission Factors | 3-92 |
| 3.8 Ethylene Dichloride | 3-99 |
| 3.8.1 Production-Usage Summary | 3-99 |
| 3.8.2 EDC Use in Gasoline | 3-99 |
| 3.8.3 EDC Use in Pest Control | 3-100 |
| 3.8.4 EDC Synthesis | 3-101 |
| 3.8.5 Other Industrial EDC Use | 3-103 |
| 3.8.6 Emission Factors | 3-105 |
| 3.9 Nitrosamines | 3-110 |
| 3.9.1 Occurrence Summary | 3-110 |
| 3.9.2 Secondary Sources | 3-111 |
| 3.9.3 Atmospheric Survey of Nitrosamines | 3-115 |
| 3.10 Perchloroethylene | 3-118 |
| 3.10.1 Production-Usage Summary | 3-118 |
| 3.10.2 Perc Production | 3-119 |
| 3.10.3 Dry Cleaning | 3-119 |
| 3.10.4 Metal Cleaning Operations | 3-121 |
| 3.10.5 Emission Factors | 3-126 |
| 3.11 Polycyclic Organic Matter | 3-134 |
| 3.11.1 General Nature of the Pollutant Category | 3-134 |
| 3.11.2 Emission Factors | 3-140 |
| 3.11.3 Ambient Levels of BaP and BSO | 3-143 |

CONTENTS (Continued)

| <u>Section</u> | <u>Page</u> |
|--|-------------|
| 4.0 POPULATION DENSITIES RELATIVE TO POLLUTANT SOURCES | 4-1 |
| 4.1 Source Mapping | 4-1 |
| 4.2 Inorganic Pollutants | 4-2 |
| 4.2.1 Arsenic | 4-2 |
| 4.2.2 Asbestos | 4-2 |
| 4.2.3 Cadmium | 4-2 |
| 4.3 Organic Pollutants | 4-6 |
| 4.3.1 Benzene | 4-6 |
| 4.3.2 Halocarbon Pollutant Sources | 4-10 |
| 4.4 Selection of Candidate "Hot Spots" for Task IV Source Testing Plan | 4-11 |
| REFERENCES | 4-15 |
| APPENDICES: | A-1 |
| A. MAJOR MANUFACTURERS OF ASBESTOS CONTAINING PRODUCTS IN CALIFORNIA | A-2 |
| B. HYDROCARBON EMISSIONS MEASURED AT THE DOUGLAS OIL COMPANY REFINERY IN PARAMOUNT, CALIFORNIA ON KVB HYDROCARBON SURVEY PROGRAM | B-1 |
| C. ESTIMATION OF SOURCE STRENGTH USING REVERSE DIFFUSION CALCULATIONS | C-1 |

LIST OF ILLUSTRATIONS

| <u>Figure</u> | | <u>Page</u> |
|---------------|--|-------------|
| 1-1 | ARB Carcinogenic Materials Study | 1-3 |
| 1-2A | State Highway Traffic Density Pattern | 1-6 |
| 1-2B | Agricultural Growing Areas | 1-6 |
| 3-1 | Estimated Release by Drift of Arsenicals Applied to Aricultural Areas in Seven California Counties in 1978 | 3-12 |
| 3-2 | Estimated Maximum Arsenic Releases from California Secondary Lead Smelters | 3-16 |
| 3-3 | Estimated Arsenic Emissions Associated with Utility-Class Steam Generators | 3-20 |
| 3-4 | Map of California Showing Principal Asbestos Deposits | 3-25 |
| 3-5 | Flow Diagram for Typical Asbestos Mill | 3-28 |
| 3-6 | Location of Asbestos Mining and Milling Facilities in the State and Emission Factors | 3-31 |
| 3-7 | Overall Benzene Production Process | 3-38 |
| 3-8 | Benzene Production and Major User Sites and Estimated Annual Emissions | 3-49 |
| 3-9 | Estimated Benzene Emissions Associated with Oil Refinery Operations | 3-55 |
| 3-10 | Estimated Cadmium Emissions from Steel Production Plants | 3-68 |
| 3-11 | Estimated Cadmium Emissions (lb/yr) for Smelters | 3-71 |
| 3-12 | Process Flow Diagram for the Production of Carbon Tetrachloride (and Perchloroethylene) | 3-74 |
| 3-13 | Flow Diagram of Process for Conversion of Carbon Tetrachloride to Fluorocarbons | 3-76 |
| 3-14 | Ethylene Dibromide Agricultural Applications for 1977 by County | 3-90 |
| 3-15 | Estimated EDB Evaporation Rates from Fumigated Soil Under Different Moisture Conditions | 3-97 |
| 3-16 | Ethylene Dichloride Agricultural Applications in 1977 by County | 3-102 |
| 3-17 | Process for the Production of EDC and VCM | 3-104 |
| 3-18 | Estimated EDC Evaporation Rates from Fumigated Soil Under Different Moisture Conditions | 3-107 |

LIST OF ILLUSTRATIONS (Continued)

| <u>Figure</u> | | <u>Page</u> |
|---------------|--|-------------|
| 3-19 | Summary of DMN Air Concentrations in Health District Areas of Los Angeles County | 3-117 |
| 3-20 | Location of 14 Degreaser-Operating Firms Estimated to be Contributing 22% of the Perchloroethylene Released in Los Angeles County by Such Operations | 3-132 |
| 4-1 | Location of Inorganic Carcinogen Emission Sources Relative to California Population Concentrations | 4-3 |
| 4-2 | Location of Organic Carcinogenic Emission Sources Relative to California Population Concentrations | 4-7 |

LIST OF TABLES

| <u>Table</u> | | <u>Page</u> |
|--------------|--|-------------|
| 1-1 | Eleven Suspected Carcinogenic Substances Selected for Specific Study on Task II | 1-2 |
| 2-1 | Summary of "Hot Spots" Identified in Task II and Their Relative Scaling Using an Arbitrary Hazard Formula | 2-6 |
| 3-1 | Estimated 1974 Arsenic Emissions in the U.S. from Various Sources | 3-2 |
| 3-2 | Arsenicals Used in California Agricultural Activities During 1978 | 3-6 |
| 3-3 | Counties Using Over 5000 lbs Arsenicals in Agricultural Applications During 1978 | 3-8 |
| 3-4 | Residual Fuel Oil Sales in California During 1977 | 3-18 |
| 3-5 | National Market Areas for Asbestos: Demand Changes Over Two Year Period | 3-26 |
| 3-6 | Dust Emissions from the Environmental Information Subsystem for Three Asbestos Mining and Milling Facilities | 3-30 |
| 3-7 | Estimated Benzene Emissions in the U.S. From Various Sources | 3-36 |
| 3-8 | Principal Benzene Consumers in State of California - 1977 Data | 3-40 |
| 3-9 | Exhaust Emissions of Benzene from Automobiles Burning Three Unleaded Gasolines of Varying Aromaticity | 3-43 |
| 3-10 | Estimated Benzene Emissions from Two Benzene Producing Gasoline Refineries | 3-46 |
| 3-11 | Estimated Benzene Emissions from Three Conversion Plants | 3-47 |
| 3-12 | Petroleum Plants Producing Asphalt But Not Gasoline | 3-51 |
| 3-13 | Estimated Benzene Emission Rates for Oil Refineries | 3-52 |
| 3-14 | Estimated Benzene Emissions from Gasoline Refineries and Asphalt Plants Operating in the State of California | 3-53 |
| 3-15 | Consumption versus Environmental Loss in the U.S. for Benzene in Solvent and Other Minor Uses | 3-59 |
| 3-16 | Benzene in the Ambient Air of Southern California | 3-60 |
| 3-17 | Estimated Cadmium Release Rates for Secondary Steel Mills in California | 3-66 |
| 3-18 | Estimated Cadmium Emission Rates for Secondary Zinc Smelters | 3-69 |

LIST OF TABLES (Continued)

| <u>Table</u> | <u>Page</u> |
|--|-------------|
| 3-19 Gasoline Refineries Operating in the State of California | 3-84 |
| 3-20 Estimated Leaded Gasoline Production and Associated EDB Usage in California During 1977/1978 | 3-86 |
| 3-21 EDB Usage in California for Various Types of Pest Control During 1977 | 3-86 |
| 3-22 EDB Usage for Pest Control in California Counties in Amounts Exceeding 1000 lb/Yr During 1977 | 3-89 |
| 3-23 Atmospheric Concentration of EDB at Urban Roadway Sites | 3-94 |
| 3-24 General Climatological Data for Fresno County in 1976 | 3-98 |
| 3-25 Estimated Leaded Gasoline Production and Associated EDC Usage in California During 1977-1978 | 3-100 |
| 3-26 EDC Usage in California Counties in Significant Amounts for Pest Control During 1977 | 3-101 |
| 3-27 Vinyl Chloride Polymerization Plants in California | 3-109 |
| 3-28 Reported Applications of Three Thiuram Pesticides in California During 1978 | 3-114 |
| 3-29 Estimated Consumption of Perc in the U.S. | 3-118 |
| 3-30 Estimated Number of Dry Cleaning Plants Using Perc in the U.S. and California | 3-120 |
| 3-31 Estimated Consumption of Perc for Dry Cleaning in California During 1978 | 3-121 |
| 3-32 Estimated Fractional and Individual Plant Perchloroethylene Usage for Degreasing in California by Plant Size and SIC Type | 3-124 |
| 3-33 Estimated Total Perchloroethylene Usage in California Degreasers by Plant Size and Type | 3-125 |
| 3-34 Estimated Perc Emissions for Manufacturing Industry Degreasing Operations for 1976 | 3-130 |
| 3-35 Estimates of Ratios for BaP, BSO and Ten PNA's for Various Processes Based on Geometric Means of Collected Data | 3-137 |
| 3-36 Estimates of Total BaP Emissions in the U.S. by Source Type | 3-139 |
| 3-37 Summarization of National Ambient BaP and BSO Data from National Air Surveillance Network | 3-144 |
| 3-38 Chronological BaP Averages for Selected U.S. Cities | 3-144 |

LIST OF TABLES (Continued)

| <u>Table</u> | <u>Page</u> |
|---|-------------|
| 3-39 Atmospheric BaP and BSO Concentrations for Chess and Champ Sites in California | 3-145 |
| 4-1 Inorganic Pollutant Source Information Corresponding to Figure 4-1 | 4-4 |
| 4-2 Organic Pollutant Source Information Corresponding to Figure 4-2 | 4-8 |
| 4-3 Organic Pollutant Source Information Corresponding to Figure 4-2 | 4-9 |
| 4-4 Task I Rating Factor Assignments | 4-12 |

SECTION 1.0

INTRODUCTION

The development of an inventory of carcinogenic substances released into the ambient air of California involved a four-element program. Science Applications, Inc. (SAI) performed Task I and III, while KVB, Inc. performed Task II, the results of which are being described in this volume, and Task IV.

The overall objectives of the program have been to:

- 1) Identify a limited number of carcinogens posing the greatest potential hazard as ambient atmospheric pollutants in California (Task I - SAI);
- 2) Locate major sources of and estimate emission factors for this list of carcinogens (Task II - KVB);
- 3) Determine usage patterns, release rates, and population exposures for the sixteen substances regulated by the Occupational Carcinogens Control Act and investigate substances of concern by incorporating into the Task I evaluation (Task III - SAI); and
- 4) Develop a field test plan to verify the more significant emission factors estimated on Task II (Task IV - KVB).

As discussed in the Task I volume, 114 substances regarded by the EPA as having carcinogenic potential were screened. By rating these under the criteria of: (1) annual U.S. production; (2) fraction lost during production; (3) volatility; and (4) carcinogenicity, the group was reduced to 35 substances (compounds or classes of compounds). Further reduction of the list was done through semi-objective quantitative algorithms based upon adding and multiplying rating factors. These included all of the factors listed above (except applied to the State rather than National level) plus rating factors for: (1) projected growth in usage; (2) stability in ambient air; and (3) potential for dispersion after release.

Application of this refinement resulted in a ranked list of 22 substances.

The final selection process involved a review of an ad hoc panel of experienced scientists convened by SAI. This two-day meeting produced an independent ordering of the 22 substances. From these three final listings the eleven highest scoring substances were then selected for study in Task II. These are listed, alphabetically, in Table 1-1.

TABLE 1-1. ELEVEN SUSPECTED CARCINOGENIC
SUBSTANCES SELECTED FOR SPECIFIC
STUDY ON TASK II

| | |
|----------------------|---------------------------------|
| Arsenic | Ethylene Dibromide |
| Asbestos | Ethylene Dichloride |
| Benzene | Nitrosamines |
| Cadmium | Perchloroethylene |
| Carbon Tetrachloride | Polycyclic Organic Matter (POM) |
| Chloroform | |

Effort was then initiated on Task II of the study to identify areas where the highest concentrations of emissions might be expected to occur resulting from the use or manufacture of these substances in California. As the materials of greatest concern were identified in Task II, test plan strategies and technical requirements were developed for follow-on field monitoring and detection of actual releases to the environment. Design of the source sampling program comprised Task IV of the overall study and is reported separately.

Emissions resulting from use of the candidate substances listed in Table 1-1 can be expected to be present in the surrounding environment at levels determined by many factors, including release rates from mobile and stationary sources. The approach to Task II, which is summarized in Figure 1-1, was to investigate the suspected areas within the state, verify the releases in these locations whenever possible, and prepare a map showing these "hot spot" areas.

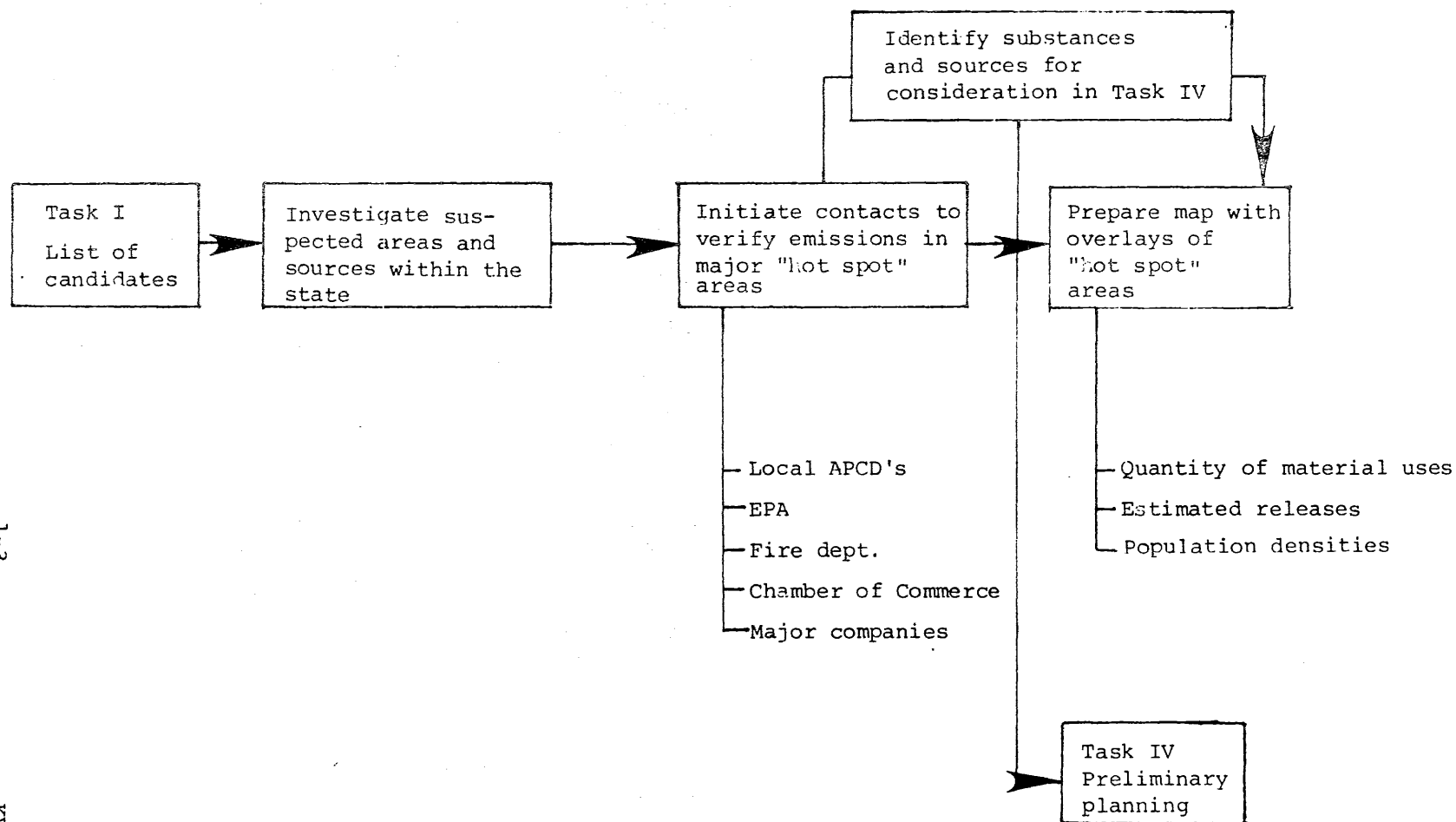


Figure 1-1 ARB Carcinogenic Materials Study; Task II--establish baseline data.

The "hot spot" areas were determined taking the following characteristics into account:

- . Number of substances present
- . Expected concentrations and flow rates of emissions
- . Potential population exposure
- . Physical characteristics of the area (topography, meteorology).

Consideration was also given to the monitoring and detection requirements posed by source types, although specific definition of sampling systems were developed during Task IV.

Contacts were made with government agencies and major producers and users of these materials to develop an inventory of emissions. Sources, recognized as "hot spots", were then displayed on maps whenever practical and coded according to ranges of estimated quantities released per unit of time. A pair of composite maps was then prepared to provide quantitative indication of the major "hot spot" areas for these substances in California (see Section 4.0). The mapping was arbitrarily separated into inorganic and organic pollutants.

Wherever sufficient data were available, information was collected regarding quantities of Table 1-1 materials used; process flow, material handling and control systems; and measured or estimated release of emissions.

Where there was a lack of sufficient data, assumptions had to be made concerning process characteristics; these are documented in the report. On completion of Task II, the areas of concern (according to substances and sources) and the quality of the available data had been reasonably identified or the need for more in-depth study specified where sufficient data were lacking.

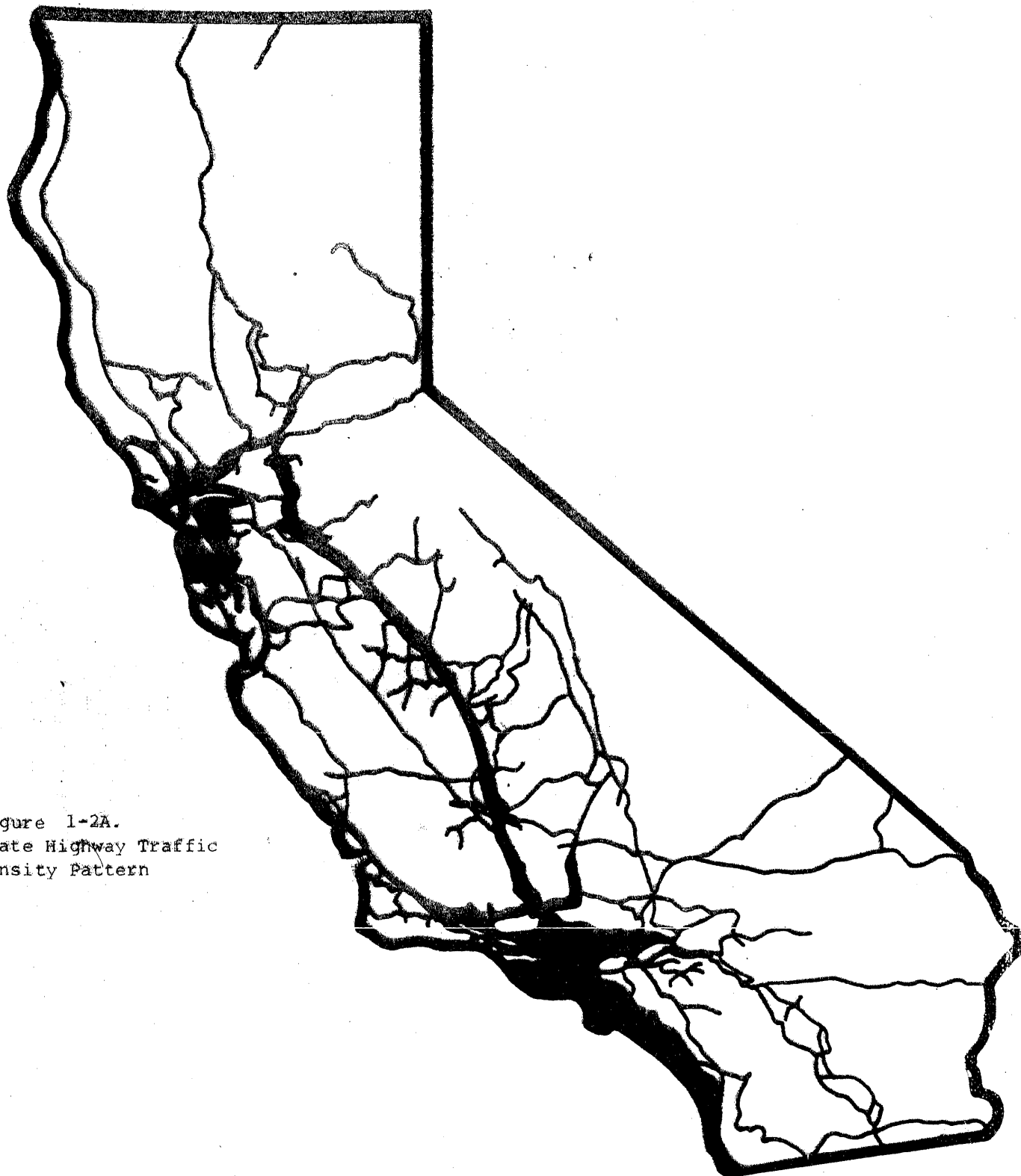
A number of the pollutants studied were associated with area or dispersed sources. These would not thus emerge as "hot spots" although comparatively large total releases were involved. In many cases, the areas sources are coincident with population density distributions.

This is generally true, for example, with dry cleaning establishments and degreaser works (perchloroethylene emitters) and home fire places (POM emitters). Other distribution patterns are seen where the pollutants are released during vehicular travel (benzene, cadmium, ethylene dibromide and dichloride and POM) and agricultural operation (arsenic, ethylene dibromide and dichloride and, possibly, nitrosamines). Because such emissions cannot be mapped as "hot spots," Figure 1-2 is introduced here for reference when these source types come under consideration under the various carcinogen headings. Figure 1-2 provides population density for the State of California together with overlays showing traffic density (for the State Highway System) and principal agricultural zones of the State.

Occasionally in this report, comparisons are made between ambient levels of the pollutants and OSHA maximum allowable concentrations (MAC'S). These data should be construed in their proper contexts. MAC'S are intended for healthy, adult, usually male workers for 40-hour work-weeks, with 8-hour work days, and with weekends and vacations included as time available for detoxification in the absence of exposure. Furthermore, MAC'S are designed primarily, although certainly not exclusively, to protect the worker from the noncarcinogenic consequences of exposure to substances that may also happen to be carcinogenic, mutagenic or teratogenic.

The present report deals exclusively with Task II results and is organized into four sections. Following this introduction are the summary of findings and conclusions reached (Section 2.0). The main body of the report (Section 3.0) considers, in alphabetic order, each of the eleven suspected carcinogens in separate subsections. The last part of the report (Section 4.0) is addressed to the superpositioning of the "hot spots" on demographic maps of the State. References and appendices follow Section 4.0.

Figure 1-2A.
State Highway Traffic
Density Pattern



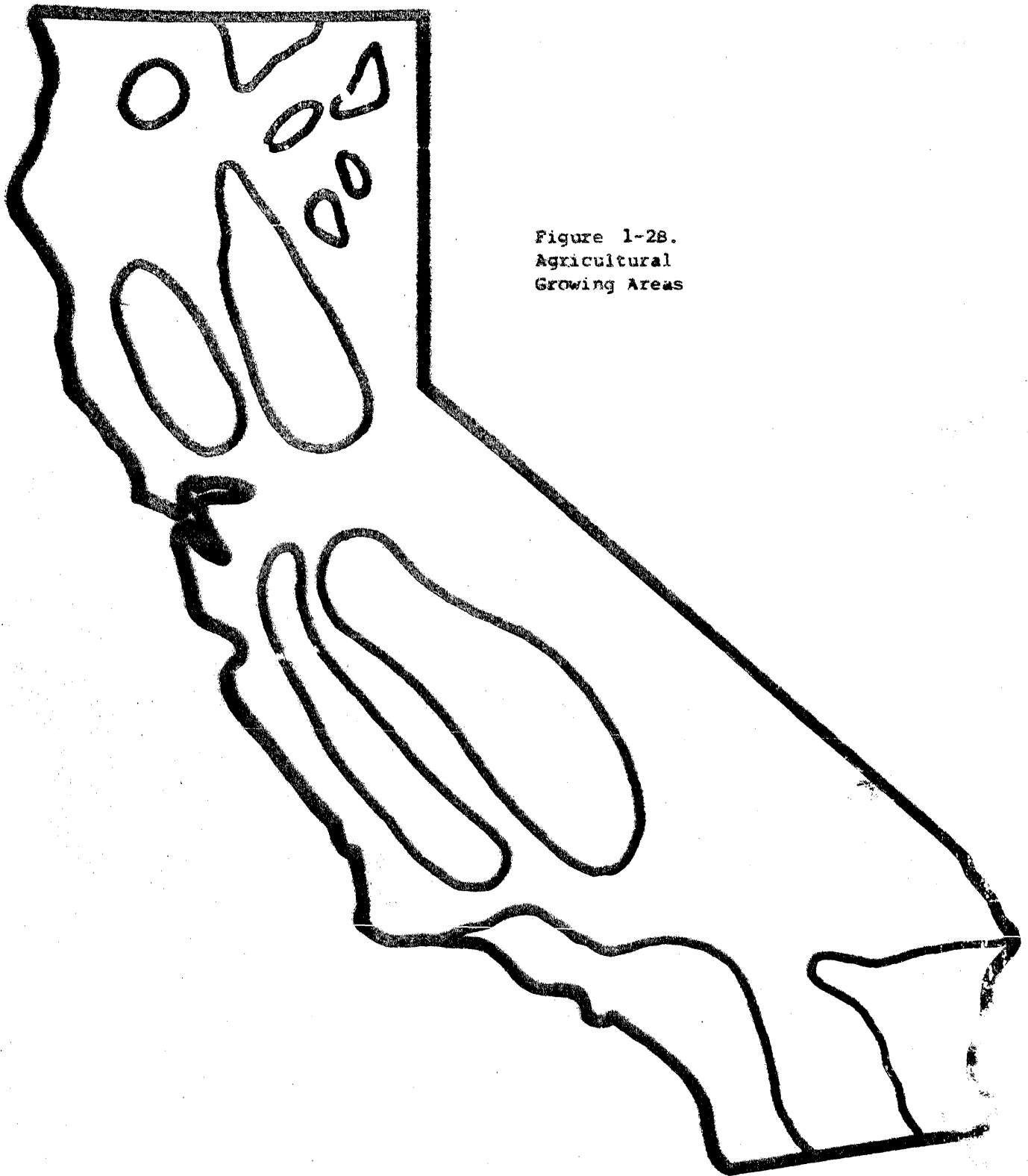


Figure 1-28.
Agricultural
Growing Areas

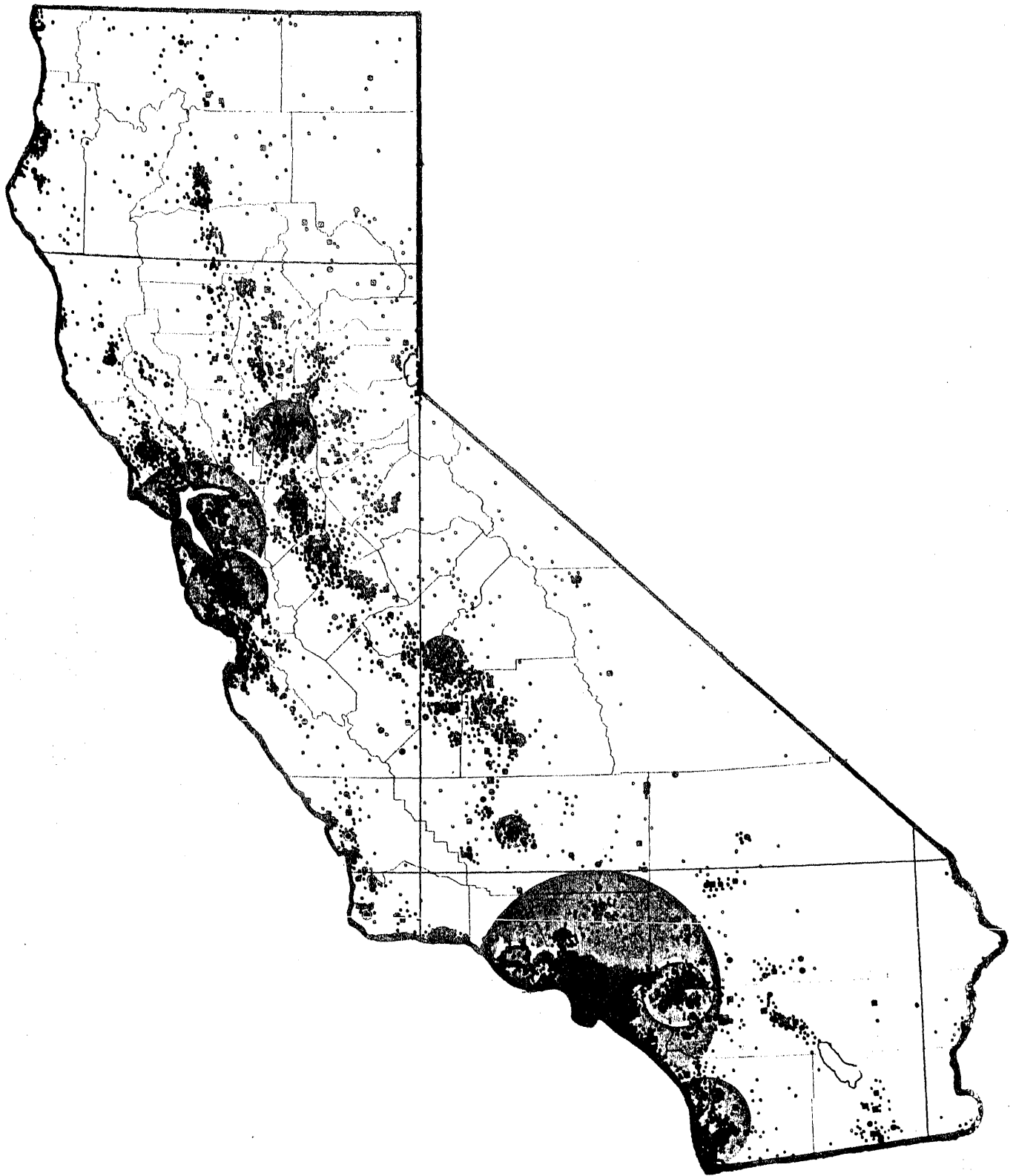
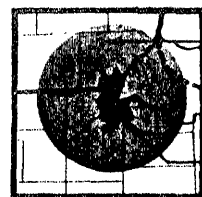
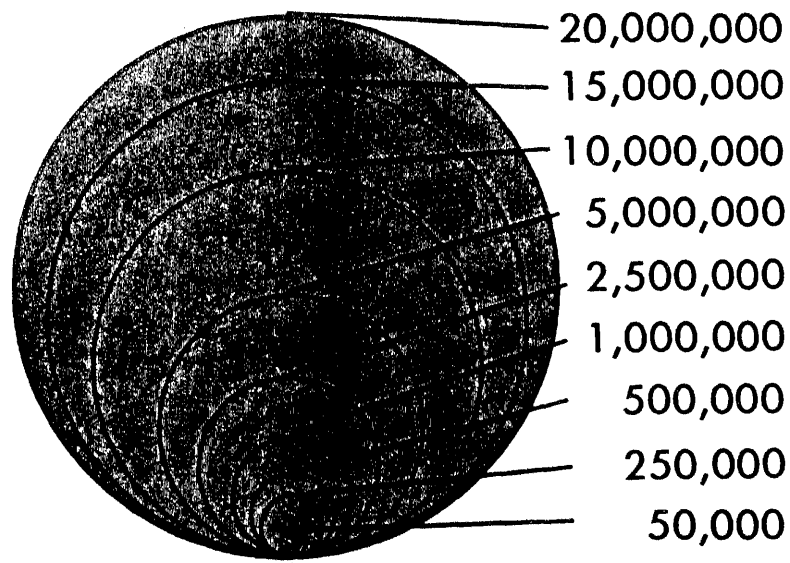


Figure 1-2A. Population Density in California

URBAN POPULATION

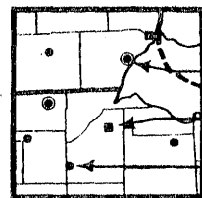
URBANIZED AREAS



Circles proportional
to population

Extent of areas

PLACES OUTSIDE URBANIZED AREAS



- 25,000 - 50,000
- 10,000 - 25,000
- 2,500 - 10,000

RURAL POPULATION



Places of 1,000-
2,500

Each dot represents
500 of remaining
population

Figure 1-2. Legend (Cont).

SECTION 2.0

SUMMARY OF FINDINGS AND CONCLUSIONS

2.1 ACCURACY OF FINDINGS

The main body of information tapped in this study consisted of four categories. The principal source was EPA-sponsored studies dealing specifically with one or more of the eleven subject carcinogens. Several CARB reports dealing with source or pollutant types, which incidentally included data on some of the carcinogens, was a second useful category accessed. The third category was comprised of government publications furnishing emission or commodity data [e.g., EPA's Compilation of Air Pollutant Emission Factors (AP-42), the Emission Inventory Subsystem (EIS), etc.]. The last category consisted of miscellaneous publications furnishing emission or commodity data developed within the private sector (e.g., API reports, Chemical Marketing Reporter, etc.).

The emission data available from this mix of literature were often engineering estimates and not derived from actual source tests. In comparing emission estimates for the same substance and source made by different authors, it is obvious that the values reported can be in error by as much as an order of magnitude. Thus, in a derivative manner, this report furnishes emission data that are highly uncertain in many cases. Where this is not pointed out, the reader is cautioned to remind himself that the data presented are predominately estimates of considerably varying quality.

It is just this condition that lends emphasis to the need of implementing the Task IV source testing plan. Then the emission factors reported here will be verified or displaced with more credible information. The present Task II analysis is nonetheless a big step in moving towards that achievement. It not only specifies which sources should be tested, but

furnishes a first-cut ranking of the identified sources in terms of their potential hazard to receptor populations. Whatever the error band this ranking incorporates, the process will still permit test events in future field efforts to be sequenced or prioritized to accommodate funding and other resource limitations.

In the following two subsections, the findings and conclusions of the study are summarized first in terms of the sources or "hot spots," then, (in alphabetical order) for each of the eleven carcinogens. These comments are presented without literature citations to promote clarity. All statements made in this section are supported by appropriately referenced analyses and discussions that are developed in the pertinent portions of Section 3.0.

2.2 MAGNITUDE OF POLLUTION

All eleven of the studied carcinogens occur as air pollutants in the State of California. Based on the estimates developed or used, two halocarbons constitute the extremes on the scale of pollutant burdens. Perchloroethylene emissions from the principal sources identified are estimated to be 58.2 million lbs/yr. By contrast, chloroform has not been identified with any industrial or commercial processes (outside of test laboratories) for which any quantity of emissions could be assigned.

Perchloroethylene releases occur from hundreds of urban industries (dry cleaners and degreasers), such that the net effect is that of an area source. Benzene, which accounts for the next largest weight of pollutant release (55 million lbs/yr), is also a highly dispersed pollutant. An estimated 98.6% of all the benzene released in the state is from mobile, area (oil fields), and scattered small point sources. Thus, the "hot spots" - the production or conversion plants - associated with these two solvents involve only small fractional amounts of the total material released.

In contrast, the next two largest releases of pollutants predominately are concentrated in only a few point sources. Over 91% of the 0.3 to 3.2 million lbs of ethylene dichloride estimated to be released in the State annually is associated with one vinyl chloride plant in Carson. All of the estimated 677,000 lbs of carbon tetrachloride released per year occurs at two chemical plants within several miles of each other on the San Joaquin River.

The fifth largest quantity of emissions (515,000 lbs/yr) is estimated for ethylene dibromide. Essentially all of this is evaporated from fumigated farm land, losses from gasoline usage being regarded as negligible.

Asbestos is estimated to be discharged into the ambient California air at a rate of about 460,000 lbs/yr. Over 90% of these emissions are associated with our three asbestos mining and milling operations. Asbestos-consuming industries, which must release no visible asbestos from vents, nonetheless do emit some of this mineral but the effect is scattered among hundreds of minor point sources.

Of the other two inorganic carcinogens, some 93,000 lbs of arsenic and 30,000 lbs of cadmium are estimated to be emitted annually. About half the cadmium and over 92% of the arsenic are released from a small number of stationary sources processing molten materials.

Of the eleven materials investigated, the greatest survey uncertainty attaches to the nitrosamines and polycyclic organic matter (POM) findings. Neither of these classes of compounds per se is consumed in California commerce in a manner that would result in their direct release to the atmosphere in significant quantities.

Because nitrosamines are known to form in atmospheric processes from related species, notably secondary amines and amides, sources for the releases of such precursors were identified. This, however, does not constitute an adequate base for estimating nitrosamine formation.

In the case of POM, which arises pyrogenically in inefficient flame processes, releases are poorly quantified because of the complex chemical nature of this very large class of compounds. The single, very carcinogenic member, benzo[a]pyrene (BaP), has been used as an indicator for POM, but the ratios of POM/BaP are apparently variable. Burdens of BaP are estimated at 38,000 lbs/yr, over three quarters of this issuing from area and highly dispersed point (e.g. forest fires and fireplaces) and mobile sources. Some 5,400 lbs/yr are estimated to be emitted from the Kaiser steel mill, Fontana. The amount of total POM which that release of BaP represents could range from 10 to 100 times greater.

2.3 THE PRINCIPAL "HOT SPOTS"

On the program, a number of stationary sources were identified as emitting significant quantities of the materials surveyed. These constituted "hot spots" or releases posing possible health hazards potentially susceptible to improved control. As pointed out in the previous subsection, far greater amounts of some of the materials are emitted by dispersed or area sources.

So that "hot spots" identified can be roughly graded or prioritized for source testing planning, an arbitrary scaling factor was applied. This was arrived at in a manner similar to that (multiplicative approach) used in Task I for the comparison of suspected carcinogens with one another. The formula employed for the present purpose is as follows:

$$\text{Scaling factor} = E \times p \times R_2 \times R_4 \times R_5 \times e^{R_6}$$

Where: E = specific pollutant emissions, tpy

p = population content of 10 km grid with "hot spots" at center, 10^3 people

R_n = rating factors (see definitions in Task I report section); briefly defined, these rank on a scale of 1 to 5 the following parameters:

R_2 - use growth of chemical in CA

R_4 - stability of chemical in ambient air

R_5 - dispersion potential of chemical

R_6 - evidence of carcinogenicity

Exponentiation of the carcinogenicity rating factor was introduced to provide emphasis for this property. It is recognized of course that such exponentiation may have limited value, given the coarseness of the scaling (1 to 5). Populations for the 100 sq km tracts were mostly averaged from CARB data for Universal Transverse Mercator (UTM) decade coordinates. Some data were developed from Census Bureau maps. This is further explained in Section 4.4.

KVB 26900-836

The results of this "hot spot" or hazard ranking process are shown in Table 2-1. It will be noted that two of the sources are listed as emitting more than one of the eleven carcinogens. What is not obvious is that several of the emission factors for some of the sources involve contributions from different types of processes in which the same pollutant is emitted. An example of this is the Chevron USA plant at El Segundo. Benzene emissions estimated for this plant include those from: (1) normal petroleum operations; (2) benzene manufacturing and marketing; and (3) internal benzene consumption for cumene synthesis.

The formula used in preparing the Table 2-1 ranking is of course quite arbitrary. For this reason, the broad range of scaling factors that resulted was accepted without culling. Some of the sources having small factors could have actual health impacts highly disproportionate to the ranking given. The actual range of the scaling factors is almost 5000. This then was considered to have an adequately broad working base for approaching the Task IV source testing plan development.

TABLE 2-1. SUMMARY OF "HOT SPOTS" IDENTIFIED IN TASK II AND THEIR RELATIVE SCALING USING AN ARBITRARY HAZARD FORMULA

(Scaling Factor = (Emissions, tpy) X (pop. dens. X 10^{-3}) X R_2 X R_4 X R_5 X e^{R_6})

| Site | Pollutant | Estimated Annual Emissions, Tons | Pop. density around site * 10^3 People/100 sq. km | Rating Factors † | | | | Scaling Factor x 10^{-6} |
|----------------------------------|----------------------|----------------------------------|--|------------------|-------|-------|-------|----------------------------|
| | | | | R_2 | R_4 | R_5 | R_6 | |
| Kaiser Steel Corp., Fontana | Benzene | 112 | 43.7 | 3 | 5 | 5 | 5 | 54.5 |
| | Cadmium | 7.0 | " | 3 | 5 | 5 | 5 | 3.4 |
| | Arsenic | 1.6 | " | 3 | 5 | 3 | 5 | 0.5 |
| | POM | 27 § | " | 4 | 5 | 5 | 5 | <u>17.5</u> |
| | | | | | | | Total | 75.9 |
| Stauffer Chemical, Carson | Ethylene dichloride | 150 # | 89.9 | 3 | 5 | 5 | 4 | 55.2 |
| Dow Chemical USA Pittsburg | Carbon tetrachloride | 160 ‡ | 63.8 | 3 | 5 | 5 | 4 | 41.8 |
| | Perchloro-ethylene | 22 ‡ | 63.8 | 3 | 5 | 5 | 4 | <u>5.7</u> |
| | | | | | | | Total | 47.5 |
| DuPont de Nemours & Co, Antioch | Carbon tetrachloride | 250 ** | 63.8 | 3 | 5 | 5 | 4 | 41.8 |
| Chevron USA, Richmond | Benzene | 50 | 62.8 | 3 | 5 | 5 | 5 | 35.0 |
| ARCO, Carson | Benzene | 25 | 75.9 | 3 | 5 | 5 | 5 | 21.1 |
| Allied Chemical, El Segundo | Carbon tetrachloride | 133 ** | 32.7 | 3 | 5 | 5 | 4 | 17.8 |
| Witco Chemical Co., Carson | Benzene | 14 | 89.9 | 3 | 5 | 5 | 5 | 14.0 |
| Chevron USA, El Segundo | Benzene | 30 | 35.9 | 3 | 5 | 5 | 5 | 12.0 |
| Gould Inc., Vernon | Arsenic | 22 | 23.6 | 3 | 5 | 3 | 5 | 3.5 |
| RSR Corp., Industry | Arsenic | 3.3 | 59.5 | 3 | 5 | 3 | 5 | 1.3 |
| ALCO-Pacific, Carson | Arsenic | 2.2 | 88.1 | 3 | 5 | 3 | 5 | 1.3 |
| Pacific Gas & Elec, Pitts. | Arsenic | 1.0 | 63.8 | 3 | 5 | 3 | 5 | 0.4 |
| Johns-Manville, Stockton | Asbestos | 2.9 | 28.5 | 1 | 5 | 5 | 5 | 0.3 |
| Calavaras Asbestos, Copperopolis | Asbestos | 148 | 0.5 | 1 | 5 | 5 | 5 | 0.3 |
| So. Cal. Edison, Long Beach | Arsenic | 0.8 | 50.0 | 3 | 5 | 3 | 5 | 0.3 |
| Pacific Gas & Elec, Salinas | Arsenic | 1.0 | 0.3 | 3 | 5 | 3 | 5 | 0.02 |

NOTES:

* Point source geographically located in center of 100 sq. km

† Rating factors defined in Task I discussion: R_2 = growth in use of pollutant in California; R_4 = stability of pollutant in air; R_5 = pollutant dispersion potential; R_6 = evidence of pollutant carcinogenicity

§ Assumes POM/benzo(a)pyrene (BaP) = 10; BaP actually measured

A minimum estimate

‡ Process factors suggest that the large difference between CT and perc emissions is suspect [See Sec. 3.5.2 (A)]

** May be high by an order of magnitude

2.4 POLLUTION SIGNIFICANCE OF THE INDIVIDUAL MATERIALS

2.4.1 Arsenic

The State's four largest secondary lead smelters appear to be the major emitters of arsenic. All are located in the SCAB and are estimated to release a combined weight of almost 60,000 lbs/yr of this pollutant. The Kaiser coking plant in Fontana is estimated to emit less than one tpy of arsenic while all the secondary steel mills together emit less than one seventh that amount. Although no significant amounts of opal or lead (arsenic recipe) glass is produced in the State, at least one plant adds arsenic to flint glass melts. Emissions of 4,690 lbs/yr were calculated for this plant (identification confidential). The manufacture and application of agricultural arsenicals, including their secondary emission from cotton gins, are not significant sources of ambient air pollution.

Ambient arsenic measurements made during the four quarters of 1974 in 15 California cities included in the National Air Sampling Network (NASN) failed to show any arsenic (detection limit = 1 ng/m^3) in most cases. For just one quarter each, NASN arsenic measurements averaged above detection limits at Long Beach, Ontario, and San Bernardino. The highest such average quarterly concentration was 14 ng/m^3 (Long Beach). As of July 13, 1979, CAL OSHA declared arsenic a regulated carcinogen and set the maximum allowable concentration (MAC) for an eight-hour time weighted average (TWA) day at $10 \text{ } \mu\text{g/m}^3$.

Conclusions: Arsenic emission factors for one or more of the secondary lead smelters in California should be verified by source testing. Because of relative capacity, the Gould plant in Vernon is estimated to be the largest such "hot spot" and should be included in this testing. Sampling of the coking ovens at the Kaiser mill in Fontana should also be undertaken. Although arsenic release during coking may prove minor, three other pollutants (benzene, cadmium, and POM) need to be tested for there, as is explained in those sections, thus justifying the inclusion of arsenic in the survey.

Manufacture of flint glass may involve the deliberate incorporation of arsenic. The practice is shielded by proprietary considerations. Samples of output of flint glassware should be obtained and analyzed for arsenic to determine which plants use the element. Atmospheric release rates can then be estimated using the emission factor already developed from the source testing of one such plant.

2.4.2 Asbestos

Operations at the three California asbestos mines at Copperopolis, Coalinga, and King City probably predominate in terms of emission of this particulate material. At these low population density sites, dust releases are estimated at 148, 56 and 3 tpy, respectively. It is further estimated that an additional 23 tpy of dust are emitted from all California plants manufacturing asbestos-containing products. The actual fractional amounts of these dust releases that comprise asbestos is unknown. Although never measured, outdoor releases from building demolitions and disturbances of asbestos ores by natural and human (e.g., recreationists) forces also contribute to the airborne asbestos burden.

Ambient levels of asbestos have been determined in various California areas. The California Department of Health reported 24-hour asbestos levels for various stations in the Berkeley-San Francisco area that averaged 35 ng/m^3 . Applying the Health Department's conversion to give a fiber count (0.4 fibers/cc), this is equivalent to 20% of OSHA maximum allowable concentration (MAC). The accuracy of airborne asbestos counting is highly controversial, a situation that has not yet been resolved.

Conclusions: EIS^{*} dust emissions recorded for plants manufacturing asbestos-containing products are comparatively small and probably conformative with the zero visible asbestos emissions required by regulation. Mass-wise, however, the tonnages involved are large enough in the case of a few of the larger plants to warrant concern if most of the dust released consists of asbestos. Source testing of a large asbestos product plant (e.g., Johns-Manville, Stockton) should thus be undertaken to measure asbestos specifically rather than total dust release.

* Emission Inventory Subsystem

Further sampling of any of the asbestos mines would probably only confirm previously developed data. A more meaningful approach would be to measure airborne asbestos in one or more of the three individual towns near the mines. Coalinga would be the logical choice because of the scaling factor of the nearby Atlas Asbestos Co. relative to the other two mines.

2.4.3 Benzene

Release of this very common and vital chemical is widespread. Over 27,500 tpy are estimated to be emitted by mobile and point sources in the State. Of this estimate, over 94% is attributed to the automobile (exhaust and tank venting). Gasoline distribution and marketing is identified as the next largest source of benzene release, with some 1,100 tpy estimated for such activities. Thus, the balance or only 1.6% of the total benzene released is identified with stationary sources.

Among the stationary benzene-emitting sources, the greatest output (194 tpy) is estimated for the State's 29 gasoline refineries and asphalt plants which do not produce or consume industrial-grade benzene. About 43% of this is released in the SCAB, 45% in the area of the industrial waterside belt running from Richmond to Martinez, and 10% in the Bakersfield/Oildale area.

Coking at Fontana accounts for the next largest point release (112 tpy) estimated, while benzene conversion (to detergent alkylate and phenol) accounts for an estimated 76 tpy of which 66% is associated with Chevron USA-Richmond and the balance with two SCAB plants. Benzene production is identified with an estimated release of 55 tpy at two SCAB refineries, one of which (Chevron USA-El Segundo) consumes part of its own production. The estimates of the benzene releases for Chevron USA-El Segundo in benzene production and consumption are isolated and therefore additive.

Based on National data, benzene releases from solvent and other minor industrial uses were considered to be too small to warrant investigation.

Ambient levels of benzene measured by the CARB, the EPA, and the API in various urban areas of California are considerably higher than values obtained for other of the studied materials. Los Angeles levels averaged about $140 \mu\text{g}/\text{m}^3$ in three measurements, while levels in reasonably ventilated areas (e.g., Palm Springs) were a surprising $30 \mu\text{g}/\text{m}^3$. Although this is 1000 times lower than OSHA MAC, the current direction of this agency is to a MAC of $3000 \mu\text{g}/\text{m}^3$.

Conclusions: On the basis of total emissions and resulting ambient levels of the pollutant, benzene emerges as the carcinogen of greatest concern of all the materials studied. This judgment is also supported by the Table 2-1 hazard-ranking of "hot spots." Five of the top nine stationary sources are benzene emitters. At least three of these five should be characterized such that the steel mill, one of the two benzene producers and one of the two benzene converters are included. Further automobile testing for specific determination of benzene emissions is urgently needed.

2.4.4 Cadmium

The principal emitter (estimated at 7.0 tpy) of this metal is found to be the Kaiser steel mill at Fontana. An equivalent amount (7.3 tpy) is estimated to be released by automobile tires most of which (80-90%) precipitates about the roadbeds.

Secondary steel and zinc operations involve negligible cadmium venting. Together, the secondary copper smelters in the State (three in the SCAB, one in San Francisco) are estimated to emit about one tenth the amount of cadmium emissions produced at the Kaiser plant.

Conclusions: The Kaiser mill is probably the principal "hot spot" for cadmium emissions in the State. Sampling at this site has already been indicated for quantitating arsenic and benzene releases. Thus, the inclusion of cadmium analysis in the samples appropriate to this measurement would be a facile additional step. Sampling of secondary steel mills for cadmium should perhaps be deferred until results for scrap-fed furnaces at Fontana have been developed.

2.4.5 Carbon Tetrachloride (CT)

Almost all of the releases of this halocarbon are associated with its production and conversion to fluorocarbons. The Dow plant at Pittsburg, which produces CT, is estimated here to release up to one-third million pounds of this carcinogen annually. The two consuming plants are associated with estimated releases over twice that - the duPont Antioch Works 500,000 lbs/yr and the Allied Chemical plant in El Segundo 175,000 lbs/yr. At least one of the operators place the levels considerably lower. Because the estimates, which are based on National Academy of Sciences' emission factors, may indeed be on the high side, source testing is clearly needed to resolve these differences.

Ambient levels of CT have ranged as high as $38 \mu\text{g}/\text{m}^3$, in brief (<1 hour) spotchecks made in industrial Los Angeles. This can be compared with the world background of $0.8 \mu\text{g}/\text{m}^3$. Some atmospheric CT probably derives from water bodies where it is known to form through chlorine addition to organic solutes. The OSHA MAC for CT is $65 \text{ mg}/\text{m}^3$.

Conclusions: The principal "hot spots" are the one CT production plant and the two CT consuming plants mentioned above. Because of their nearness to one another, the Dow CT plant and the du Pont freon works would be logical sources to sample.

2.4.6 Chloroform

Use of this halocarbon in California commerce was not detected. The Allied Chemical plant in El Segundo did convert large quantities of chloroform to Genetron 22 up until recently. Today, laboratory use of the material is the only known application.

Like CT, chloroform is also released to the atmosphere by aqueous systems. Chlorine in drinking and reclaimed water is associated with this effect. The world background for chloroform is less than $0.2 \mu\text{g}/\text{m}^3$, with urban levels averaging about $1.5 \mu\text{g}/\text{m}^3$.

Conclusions: No known "hot spots" for chloroform release exist in California. Ambient or source testing for this pollutant is therefore not indicated.

2.4.7 Ethylene Dibromide (EDB)

The principal release paths for EDB are through the automobile and in its application as a pesticide. Air ambient to heavily trafficked (25,000-30,000 vehicles/day) roadways near gasoline stations averaged only $0.08 \mu\text{g}/\text{m}^3$ of EDB for measurements taken in three cities. This is considerably lower than the world (troposphere) background for carbon tetrachloride and chloroform (0.8 and $0.2 \mu\text{g}/\text{m}^3$, respectively).

In pesticide application, the permitted usage of EDB was recorded at 806,695 lbs for 1978. This is an increase of 57% over the previous year. An unknown but probably large fraction of this fumigant reaches the atmosphere producing acute high local levels in rural areas.

Conclusions: No "hot spots" for EDB were identified, such that point source testing does not appear warranted. Sampling for EDB under controlled or field conditions while and after being applied as a pesticide would be desirable from an industrial hygiene viewpoint.

2.4.8 Ethylene Dichloride (EDC)

The focal point for this suspected carcinogen is the Stauffer Chemical Co. plant in Carson, which synthesizes this material. Annual EDC release to the atmosphere there is estimated to be between 150 and 1600 tpy. Most of the EDC produced is converted internally to vinyl chloride. Because of the wide range in the values (resulting from somewhat disparate emission factors independently developed for the EPA) the need for source testing is emphasized.

Solvent uses of EDC in the State are limited. Total annual EDC consumption is probably around 250 tpy in this application. Only two users could be identified -- Keysor-Century, Saugus (vinyl chloride polymerization
back chemical and EDCO. Central Valley (which for some time had a

Resorting, then, to BaP data, the largest POM-emitting point source identified was the coking plant of the Kaiser steel mill in Fontana. The estimated release is 5,500 lbs/yr (BaP). Larger weights of POM are emitted by home fireplaces (16,000 lbs/yr BaP estimated) and forest fires (~10,000 lbs/yr BaP). The former source type is, however, highly dispersed while the latter source category is probably susceptible to no more control than is currently available. Tire wear is believed to result in the release of some 3,000 lbs/yr of BaP. Motorcycles, which are predominately powered by two-cycle engines, are estimated to emit some 2,000 lbs/yr BaP. Gasoline engine automobiles emit about half that amount, even though automobiles consume over 150 times the gasoline burned in motorcycles. Diesel engined vehicles, because of their lower populations, are involved in only minor releases of BaP.

Ambient levels of BaP in 7 Southern California stations averaged $1.8 \mu\text{g}/\text{m}^3$ with seasonal levels ranging to highs of $7.5 \mu\text{g}/\text{m}^3$. The average can be compared with $1.2 \mu\text{g}/\text{m}^3$ which is the National average for cities in or near which steel mills operate.

Conclusions: Characterization of POM releases from the Kaiser coking plant should be undertaken. Particulate catches should be analyzed in as much detail as practical. State of the art methodology should also be applied in the continuing efforts to characterize POM releases from Diesel and gasoline engine vehicles.

SECTION 3.0

INVENTORY FINDINGS

3.1 ARSENIC

3.1.1 Occurrence and Release Summary

A considerable number of sources for potential emissions of arsenic compounds exist. These include thermal operations in which the relatively volatile arsenic (sublimes at 615 °C.) would be released as a minor constituent of the bulk material processed, as in metal and glass production, coal and petroleum combustion, and waste incineration. A major source of potential arsenic release is the manufacture and application of arsenic-containing pesticides, both of the inorganic and organometallic types.

The levels of arsenic measured in ambient air by the National Air Sampling Network (NASN) showed an annual National average of $0.020 \mu\text{g}/\text{m}^3$ in 1964-1965 and $0.003 \mu\text{g}/\text{m}^3$ 10 years later (1974). The difference was probably due more to an improvement in the analytical chemistry applied than to air quality enhancement occurring. Eighteen California cities are covered by the NASN. Arsenic was reported for 1974 at Long Beach (1st Qtr. = $0.014 \mu\text{g}/\text{m}^3$), Ontario (2nd Qtr. = $0.011 \mu\text{g}/\text{m}^3$) and San Bernardino (3rd Qtr. = $0.006 \mu\text{g}/\text{m}^3$). All other quarters, no arsenic was detected (limit = $0.001 \mu\text{g}/\text{m}^3$) at these or the other 15 California cities covered by the NASN.

Researchers at Union Carbide (Ref. 1) and Versar (Ref. 2) have published their estimates of atmospheric releases of arsenic. These are compared in Table 3-1. It is interesting to note that the only gross differences occur where one of the survey groups appears to dismiss what the other regards as a fairly significant source. This is the case with petroleum combustion and nonferrous alloy production (secondary smelting).

Of the sources itemized in Table 3-1, several do not exist in the State while others are of limited number. According to the Bureau of Mines (Western Field Operations Center, Spokane), no primary smelters for copper, zinc, lead or manganese operate in California. Mining of arsenic bearing ores (zinc-lead, lead-zinc, and lead ores) is limited, with California ranked 18th out of the 23 zinc-ore producing states in the United States. Secondary lead smelters operate in California, the four major ones all being located in the SCAB.

TABLE 3-1. ESTIMATED 1974 ARSENIC EMISSIONS
IN THE U.S. FROM VARIOUS SOURCES

| Emission Source | Arsenic Emissions, 10 ³ lbs/yr | |
|-----------------------------------|---|------------------------------------|
| | Union Carbide Estimates (Ref. 1) | Versar Corp. Estimates (Ref. 2) |
| Mining | 4 | No Estimate |
| <u>Primary Smelters</u> | | |
| Copper | 5,400 | 10,580 |
| Zinc | 2,780 | 419 |
| Lead | 752 | 529 |
| Iron & Steel | 194 | 71 |
| Nonferrous Alloys (Sec. Smelters) | Negligible | 287 (Lead Alloys) |
| Cotton Ginning & Burning | 690 | 391 |
| Glass Manufacture | 1,276 | 463 |
| Wood Preservatives | Negligible | No Estimate |
| Nonpesticide Arsenicals | 6 | No Estimate |
| Pesticide Production | 392 | 287 |
| Pesticide Application | 5,850 | 5,069 |
| Coal Utilization | 1,180 | 1,433 |
| Incinerators | 4 | No Estimate |
| Water & Waste Water Treatment | No Estimate | 2.2 |
| Manganese Ore Processing | No Estimate | 22 |
| Petroleum Combustion | No Estimate | 238 |
| Feed Additive Production | No Estimate | 4.4 |
| TOTAL | 18,536 | 19,795.6 |

KVB 26900-836

Iron-steel production centers in one primary mill - - Kaiser, Fontana - - and five secondary plants all having air pollution control (APC) systems. Coal utilization predominantly involves the Kaiser plant, again, where an estimated 2.0×10^6 ton/yr are converted to coke. Only one firm was found that burns coal to produce steam. Two such units are operated by Kerr-McGee in Trona. Portland cement production relies on coal combustion gas to dehydrate lime. Arsenic emissions from Kerr-McGee and the cement plants are doubtless trivial, because the processes themselves preclude such releases.

In the area of glass manufacturers, a local representative of the Glass Packaging Institute advised that the use of arsenic was principally associated with lead and opal glass production. Neither of these specialty glasses is made in the State. On a recent KVB study (Ref. 3), it was found that arsenic was also incorporated into flint glass melts and that emissions of that metal from a major bottle plant were significant.

Arsenic release from water and wastewater treatment (particularly cooling) is estimated at 2200 lbs/yr nationally (Ref. 2). Most of these releases are associated with water streams in contact with the processing, sintering, and smelting of ores high in arsenic. Since these operations are not practiced in the State, the effect can be assumed absent.

Feed additive production (from cotton-seed cake) is also a source that is so minor that concern is unwarranted. This is also true, according to SRI (Ref. 4), in the case of the preservation of wood with arsenic compounds.

Because of stringent air pollution regulations, solid waste incineration in California is essentially non-existent.

Opinion on arsenic release associated with petroleum (primarily residual boiler fuels) combustion is divided. In the case of Versar's estimates, this source furnishes 5% of the total arsenic atmospheric burden. This could amount to a much larger fraction for California, since some of the major sources of arsenic emissions tolerated elsewhere do not contribute to the total burden here. Thus, studies are needed to determine what magnitude of arsenic emissions are actually produced by such sources.

KVB 26900-836

Agriculture comprises the major source of potential arsenic emissions in California. In 1978, 101 tons of arsenicals were applied in California. Most of it was applied for the top defoliation of cotton plants. Thus, the emission of arsenic from the State's 233 cotton gins (Ref. 4) comes to question. These devices broadcast considerable particulate matter, which would still retain residues of the arsenical defoliant, if these were previously applied to the cotton plant matter being ginned.

Other published information to the contrary (Ref. 4), manufacturers of agricultural arsenicals is confined to one plant in California -- the Los Angeles Chemical Company of South Gate. This company produces only sodium arsenite, a material in limited usage by California grape growers.

In summary, then, attempts to identify specific arsenic emission sources will therefore focus on the following operations:

- . Pesticide application and secondary mobilization (cotton ginning)
- . Primary steel mill (coking)
- . Secondary steel and lead production
- . Oil combustion
- . Pesticide manufacture
- . Glass Manufacture

3.1.2 Emission Factors

A. Pesticide Application and Secondary Mobilization--

1. Data Source--the pesticide usage data tabulated in this section and the sections dealing with carbon tetrachloride, ethylene dibromide and ethylene dichloride were extracted or derived from:

- . 1978 Pesticide Use Report (PUR)
- . Pesticide Use Report By Commodity 1978

These publications are prepared and issued annually by the Pest Management, Environmental Protection and Worker Safety Division (Pesticide Registration and

Agricultural Productivity) of the California Department of Food and Agriculture.

County breakdowns of pesticide usage by commodity are not available from the PUR. These were obtained by conducting manual searches of the computer printouts made available at Sacramento by the Pesticide Registration Office.

Data presented in this report that are derived from the PUR or the printouts just mentioned do not furnish total usage. As the PUR itself points out, "uses of restricted materials [all considered in this report are of that category] requiring a permit..., this report reflects approximately 85% of total usage". Other sources have estimated the usages shown in PUR for this category (restricted and requiring permit) to be as low as 52% of actual. This was considered highly unlikely by Pesticide Registration personnel.

In this report, PUR data are used without application of correction factors. The intent was to first dimension releases, then determine what, if any, factors would be appropriate to use.

2. Pesticide application--The amounts of arsenicals applied to California crops during 1978 are shown in Table 3-2. Of the combined amount of all types of arsenicals employed, 64.3% was applied to cotton, 10.4% to grapes, 7.7% to highway weeds, and the balance of 17.6% to a mix of dispersed receptor sites. Use of arsenic acid, arsenic trioxide, calcium arsenate, lead arsenate and sodium arsenate was trivial. No use of arsenic trichloride, calcium or copper arsenite, copper arsenate, Paris green, or zinc arsenate was reported. This is also true of arsine, which erroneously has been called a pesticide by at least one author.

KVB 26900-836

TABLE 3-2. ARSENICALS USED IN CALIFORNIA
AGRICULTURAL ACTIVITIES DURING 1978*

| | Total Used Lbs | Acres |
|--|-------------------|---------|
| <u>ARSENICAL</u> | | |
| <u>Arsenic Acid, total</u> | 33 | - |
| <u>Arsenic Trioxide, total</u> | 0.01 | - |
| <u>Cacodylic Acid</u> | | |
| Cotton | 11,558 | 111,740 |
| State highways | 1,465 | - |
| Various small users | 2,304 | 24 |
| Total | 15,327 | 11,764 |
| <u>Calcium Arsenate</u> | | |
| Avocado | 44 | 34 |
| Grapefruit | 75 | 124 |
| Lemon | 37 | 17 |
| Orange | 578 | 597 |
| Strawberries | 104 | 52 |
| Tomato | 62 | 31 |
| Various small users | 362 | - |
| Total | 1,262 | 855 |
| <u>Disodium Methearsonate (DSMA)</u> | | |
| Cotton | 40,207 | 19,248 |
| State highway | 1,212 | - |
| Various small users | 1,027 | 150 |
| Total | 42,446 | 19,398 |
| <u>Lead Arsenate (Standard)</u> | | |
| Grapes | 15 | 8 |
| Other | 7 | - |
| | 22 | 8 |
| <u>Monosodium Methearsonate (MSMA)</u> | | |
| Cotton | 10,267 | 5,329 |
| Citrus | 1,077 | 596 |
| State highways | 5,460 | - |
| Turf | 958 | 334 |
| Nonagricultural areas | 627 | 242 |
| Irrigation districts | 4,386 | - |
| Agr. commissioners | 5,611 | - |
| Other agencies | 2,137 | - |
| Various small users | 3,569 | - |
| | 34,092 | 6,496 |
| <u>Sodium Arsenate</u> | | |
| Grapes | 240 | 20 |
| <u>Sodium Arsenite</u> | | |
| Grapes | 20,539 | 3,743 |
| Small users | 195 | - |
| Total | 20,734 | 3,743 |
| <u>Sodium Cacodylate</u> | | |
| Cotton | 67,761 | 111,740 |
| Agr. commissioners | 2,996 | - |
| Flood control | 2,903 | - |
| City agency | 1,023 | - |
| Other agencies | 1,962 | - |
| School districts | 1,756 | - |
| State highways | 7,394 | - |
| Various small users | 2,149 | 24 |
| Total | 87,854 | 111,764 |

* Source: "1978 Pesticide Use Report" California Department of Food & Agriculture

KVB 26900-836

Application of arsenicals in quantities over 5,000 lb/yr occurred in only seven of the California counties. These counties and their usage of arsenicals are enumerated in Table 3-3.

The total weight of arsenicals used in these seven counties (158,305 lbs) amount to less than 0.25% of the National consumption, usage being heavily centered in Texas and Oklahoma cotton areas. Emissions from the application of arsenicals are set at about 10% of the amount applied (Ref 2). This figure appears to be high, since none of the compounds in question are appreciably volatile. Cacodylic acid (m. pt - 200 °C) would exhibit the highest vapor pressure of any of the major arsenicals employed in the State. This is in the micrometer range of mercury pressure according to a spokesman of the Vineland Chemical Company, a New Jersey firm making this and other arseno-organics. Arsenic emissions associated with pesticide applications are thus likely to be predominately the aerosol drift occasioned during the actual spraying of the fields. Subsequent releases are probably at such low rates as not to be of concern beyond the immediate perimeters of the receptor crop fields.

Most of the arsenic pesticides are applied to cotton (64.3%) and grapes (10.4%), the balance of spraying being for dispersed targets. Based on the estimates offered by University of California agronomists, a drift loss of 5% of the amount applied was assumed. Spray equipment dealers felt that 2% was a maximum loss value and that very little of this drift could possibly ever survive as an atmospheric hazard.

In any case, factoring the 5% drift loss with application rates given in Table 3-3 for the seven counties of interest, the following acute release data were calculated.

ESTIMATED ACUTE RELEASE FACTORS FOR ARSENICALS, TOTAL GRAMS/ACRE

| <u>Cacodylic Acid</u> | <u>Cotton</u> | | <u>Sodium Cacodylate</u> | <u>Grapes</u> |
|-----------------------|---------------|-------------|--------------------------|------------------------|
| | <u>DSMA</u> | <u>MSMA</u> | | <u>Sodium Arsenite</u> |
| 2.3 | 44.7 | 45.8 | 13.4 | 130.9 |

KVB 26900-836

TABLE 3-3. COUNTIES USING OVER 5000 LBS ARSENICALS
IN AGRICULTURAL APPLICATIONS DURING 1978*

| <u>ARSENICAL</u> | | | | | |
|---------------------------|--------------------|--------|---------------|--|--------------------|
| <u>Application</u> | <u>lbs - Acres</u> | | <u>Totals</u> | | <u>lbs - Acres</u> |
| <u>A. FRESNO COUNTY</u> | | | | | |
| Cacodylic Acid | | | | | |
| Cotton | 4,701 | 40,349 | 4,701 | | 40,349 |
| DSMA | | | | | |
| Cotton | 1,237 | 776 | 1,237 | | 776 |
| Lead Arsenate | | | | | |
| Grapes | 15.2 | 8 | | | |
| Other | 14 | - | | | |
| Total | | | 29 | | 8 |
| MSMA | | | | | |
| Cotton | 797 | 545 | | | |
| Oranges | 182 | 216 | | | |
| Other | 7 | - | | | |
| Total | | | 986 | | 761 |
| Sodium Cacodylate | | | | | |
| Cotton | 27,562 | 40,349 | | | |
| Other | 7 | - | | | |
| Total | | | 27,569 | | 40,349 |
| Sodium Arsenite | | | | | |
| Grapes | | | <u>8,955</u> | | <u>1,834</u> |
| County Totals | | | 43,477 | | 84,077 |
| <u>B. IMPERIAL COUNTY</u> | | | | | |
| Cacodylic Acid | | | | | |
| Cotton | 572 | 4,373 | | | |
| Other | 104 | - | | | |
| Total | | | 676 | | 4,373 |
| DSMA | | | | | |
| Cotton | 816 | 468 | 816 | | 468 |
| MSMA | | | | | |
| Cotton | 1,373 | 718 | | | |
| Other | 2,174 | - | | | |
| Total | | | 3,547 | | 718 |
| Sodium Cacodylate | | | | | |
| Cotton | 3,354 | 4,373 | | | |
| Other | 602 | - | | | |
| Total | | | <u>3,956</u> | | <u>4,373</u> |
| County Totals | | | 8,995 | | 9,932 |
| <u>C. KERN COUNTY</u> | | | | | |
| Cacodylic Acid | | | | | |
| Cotton | 3,440 | 36,121 | | | |
| Other | 145 | - | | | |
| Total | | | 3,585 | | 36,121 |
| DSMA | | | | | |
| Cotton | 23,871 | 10,340 | 23,871 | | 10,340 |
| MSMA | | | | | |
| Cotton | 6,831 | 3,454 | | | |
| Other | 1,394 | - | | | |
| Total | | | 8,225 | | 3,454 |

* Source: California Department of Food & Agriculture

KVB 26900-836

TABLE 3-3 (Continued)

| <u>ARSENICAL</u> | | <u>Totals</u> | |
|-------------------------|--------------------|--------------------|--------|
| <u>Application</u> | <u>lbs - Acres</u> | <u>lbs - Acres</u> | |
| MSMA | | | |
| Cotton | 469 121 | | |
| Other | 340 - | | |
| Total | | 809 | 121 |
| Sodium Cacodylate | | | |
| Cotton | 5,469 9,859 | | |
| Other | 22 - | | |
| Total | | 5,491 | 9,859 |
| Sodium Arsenite | | | |
| Grapes | - - | 1,564 | 189 |
| County Totals | | 10,729 | 21,147 |
| G. <u>TULARE COUNTY</u> | | | |
| Cacodylic Acid | | | |
| Various agencies | - - | 368 | - |
| Calcium Arsenate | | | |
| Oranges | - - | 20 | 40 |
| DSMA | | | |
| Cotton | 3,950 1,185 | | |
| Other | 262 - | | |
| Total | | 4,212 | 1,185 |
| MSMA | | | |
| Cotton | 247 170 | | |
| Grapefruit | 4 10 | | |
| Other | 4,698 - | | |
| Total | | 4,949 | 180 |
| Sodium Arsenite | | | |
| Grapes | - - | 1,460 | 277 |
| Sodium Cacodylate | | | |
| Cotton | 1,992 3,604 | | |
| Other | 165 - | | |
| Total | | 2,157 | 3,604 |
| County Totals | | 13,166 | 5,286 |

KVB 26900-836

TABLE 3-3. (Continued)

| <u>ARSENICAL</u> | | <u>Totals</u> | |
|-----------------------------|--------------------|--------------------|---------------|
| <u>Application</u> | <u>lbs - Acres</u> | <u>lbs - Acres</u> | |
| Sodium Arsenite Grapes | - - | 911 | 175 |
| Sodium Cacodylate Cotton | 20,171 36,121 | | |
| Other | 847 | | |
| Total | | <u>21,018</u> | <u>36,121</u> |
| County Totals | | 57,610 | 86,211 |
| <u>D. KINGS COUNTY</u> | | | |
| Cacodylic Acid Cotton | 583 6,848 | | |
| Other | 2 - | | |
| Total | | 585 | 6,848 |
| DSMA Cotton | - - | 4,172 | 2,767 |
| MSMA Cotton | 292 226 | | |
| Other | 15 - | | |
| Total | | 307 | 226 |
| Sodium Arsenite Grapes | - - | 52 | 10 |
| Sodium Cacodylate Cotton | 3,419 6,848 | | |
| Other | 8 - | | |
| Total | | <u>3,427</u> | <u>6,848</u> |
| County Totals | | 8,543 | 16,699 |
| <u>E. MADERA COUNTY</u> | | | |
| Cacodylic Acid Cotton | 857 9,272 | | |
| Other | 41 - | | |
| Total | | 898 | 9,272 |
| DSMA Cotton | 4,043 2,484 | | |
| Other | 136 - | | |
| Total | | 4,179 | 2,484 |
| MSMA Commissioners | - - | 2,580 | - |
| Sodium Cacodylate Cotton | 5,023 9,272 | | |
| Other | 105 - | | |
| Total | | <u>5,128</u> | <u>9,272</u> |
| County Totals | | 12,785 | 21,028 |
| <u>F. MERCED COUNTY</u> | | | |
| Cacodylic Acid Cotton | 933 9,859 | | |
| Other | 4 - | | |
| Total | | 937 | 9,859 |
| DSMA Cotton | - - | 1,928 | 1,119 |

Applying the actual usage values to the total acreage involved, the distributions of material released can be geographically organized as shown in Figure 3-1. Because of the size distribution of the aerosol involved, durations of airborne pesticide releases are probably very brief. Also, application to produce defoliation is undertaken in any given area no more than once a year.

3. Secondary Mobilization of Arsenical Spray Residues--Cotton ginning and the incineration of gin trash become sources for arsenic release if the gin input material had been contacted with arsenicals while in the field. In California, gin-trash burning occasionally occurs illicitly, but most trash is returned to the fields and plowed under. There are 233 operating gins in California according to listings obtained from the three Cotton Division offices of the USDA Agricultural Marketing Service.

Particulate emissions from well-controlled gins have been estimated at 2.6 lbs/bale by EPA's Youngblood (Ref. 5). A Texas Air Control Board spokesman advised that arsenic levels as high as 0.7% have been measured in gin dust in that State. This would suggest an arsenic release as high as 0.02 lb/bale.

Youngblood's particulate emission factor was checked to determine its appropriateness with State gins. Using Imperial County as the site having the most normal weather in 1978, production of individual gins were obtained and compared with the particulate release rates on file with the local APCD. With seasonal throughputs for 10 of the 13 gins operating there, it was calculated that the average emission of particulate was 2.7 lbs/bale. This value, which agrees very well with Youngblood's, included extremes of 1.3 and 4.5 lbs/bale.

Excepting the Texas value, data on the arsenic content of gin feed or emissions were not found. It was apparent from the usage rate of arsenicals that the value would have to be quite low. According to the USDA Agricultural Marketing Service (Cotton Division), cotton defoliation in California is predominately done using nonarsenicals, notably Paraquat and DEF.

A preliminary scenario was therefore tested. Data for Fresno

KVB 26900-836

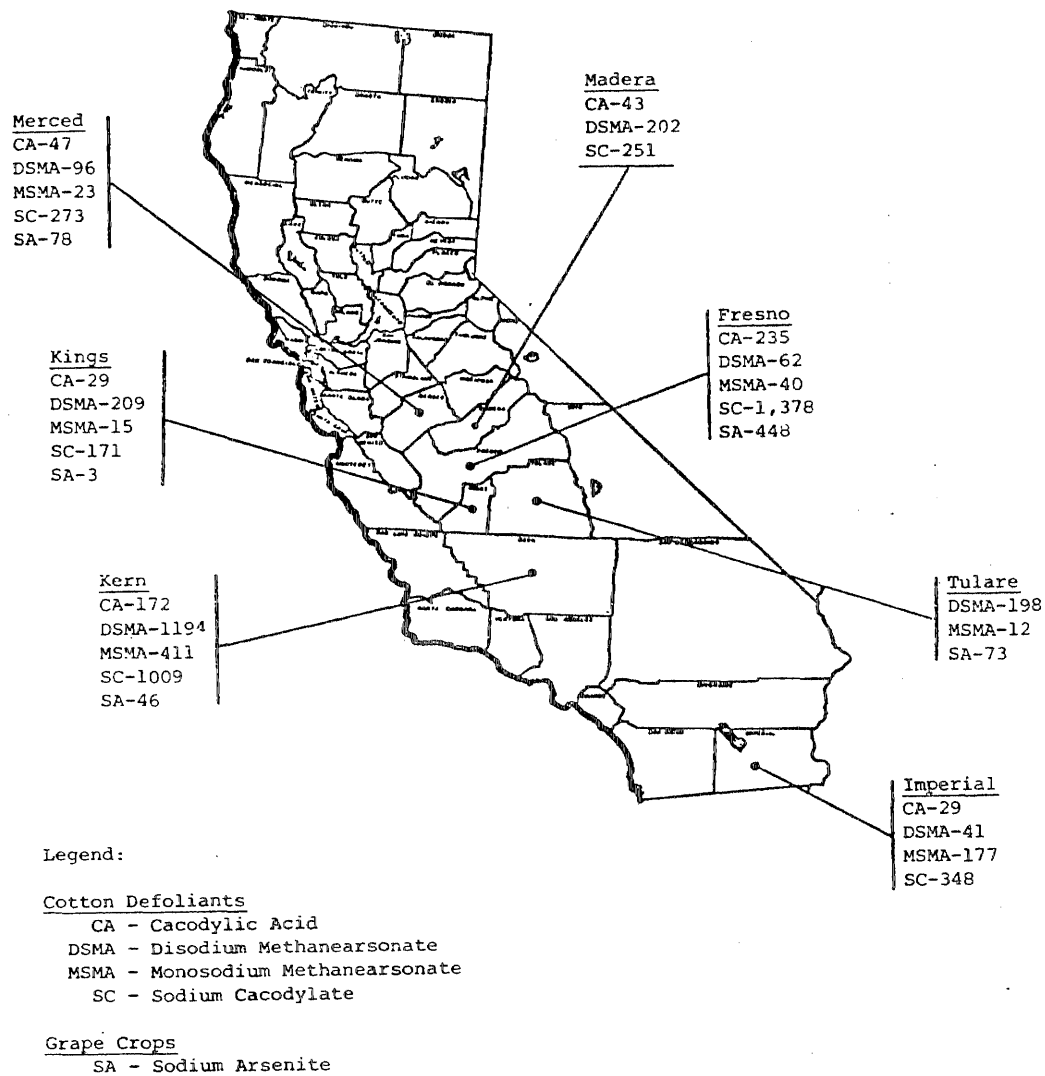


Figure 3-1. Estimated release by drift of arsenicals (in pounds) applied to agricultural areas in seven California counties in 1978.

County, the largest cotton producer (252 million lbs) and largest applier of arsenicals on cotton (34,297 lbs), were used. It was assumed that all the arsenicals applied eventually went into the gin. The elemental arsenic content (47.7%) was derived from the usage data for the four arsenicals used in Fresno County (predominately sodium cacodylate). The calculated arsenic input was then distributed over the mass of input material, of which about 30% typically results as the baled lint. The balance is seed, trash, and moisture. An arsenic content of only 6.5×10^{-3} wt % is calculated.

Further, it was assumed that the dust emitted to the atmosphere from the gin's cyclone had the same composition as the feed material. Then, given the particulate emission factor of 2.7 lbs dust/bale produced (from 504,000 bales) the total arsenic release for all the Fresno County gins in 1978 was found to be 88 lbs. Thus, gins may be dismissed as arsenic sources here.

B. Primary Steel Production--

According to the Versar report (ref. 2), arsenic is emitted during the basic ore reduction process (13.2 tons/yr) and later (22.0 tons/yr) during casting operations. In the case of the ore reduction, an APC* efficiency of 99% was assumed. These data are for the National steel industry.

The only integrated steel plant in California is the mill at Fontana operated by Kaiser Steel, Inc. According to a company spokesman, Kaiser's output of steel and iron products was just under two million tons in 1978. This represents about 2.1% of the national production, so the arsenic emission factor for ore working (555 lbs) and iron casting (925 lbs) would be 1,480 lbs/yr, based on the Versar release data cited above.

Arsenic emission from coal coking are dismissed by the Versar authors because low-sulfur coal is used for this process. It was assumed that the arsenic content was more or less at a constant ratio with respect to sulfur level. Western coals contain only about 18% of the arsenic considered average (5.44 ppm) for all American coal (Ref. 2). Yet, 1.0 ppm is sufficiently high in terms of masses involved to warrant consideration. Using the arsenic

* Air Pollution Control

release rate associated with coal combustion (Ref 2), an additional 1,635 lbs of arsenic are calculated. This is based on Kaiser's coal capacity 2,336,000 tons/yr containing 1 ppm arsenic, 35% of which is released to the atmosphere.

The overall emission factor for the Kaiser Fontana plant is thus estimated as follows:

ESTIMATED ARSENIC EMISSIONS FROM THE KAISER STEEL MILL, FONTANA

| | <u>Iron Ore Reduction</u> | <u>Foundry Operations</u> | <u>Coking</u> | <u>Total</u> |
|----------------------------------|-------------------------------|-------------------------------|---------------|--------------|
| Total Arsenic Emitted, lbs/yr | 555 | 925 | 1635 | 3115 |

C. Secondary Metal Processing--

1. Steel Mills--Besides the Kaiser plant, five other mills are operated in the State that work scrap and pig iron. These secondary mills together with their estimated outputs (furnished by an industry representative) are itemized as follows:

| <u>Company</u> | <u>Location</u> | <u>Estimated 1978 Output, 10³ tons</u> |
|-----------------|-----------------|---|
| Bethlehem Steel | Vernon | 400 |
| U.S. Steel | Torrance | 100 |
| Soule Steel | Carson | 110 |
| Ameron | Etiwanda | 300 |
| Judson Steel | Emeryville | 90 |

Because these mills do not process coke or iron ore, arsenic release would be associated only with pig iron usage. This burden was estimated at 26,500 lbs for the nation in the Versar report. Considering the production fraction of the National total represented by the five secondary plants, an annual release of only 279 lbs arsenic total is calculated for all five mills.

2. Secondary Lead Smelters--With the exception of scattered, much smaller smelters, four secondary lead plants essentially represent that industry in California. These are listed together with production figures which represent rough estimates furnished by the technical manager of one of the smelters.

SECONDARY LEAD SMELTERS IN CALIFORNIA

| Company | Location | Estimated Annual Lead Production, 10 ³ Tons |
|--------------------|------------------|--|
| Gould Inc. | Vernon | 50 |
| RSR Corporation | City of Industry | 7.5 |
| Southwest Smelting | San Bernardino | 5 |
| ALCO-Pacific | Carson | 5 |
| Total | | 67.5 |

Much of the lead scrap processed by these smelters, all of which operate blast and/or rotary furnaces, is antimonial lead. This alloy contains up to 0.5% arsenic. For such feed, SRI (Ref. 4) speculates that arsenic emissions may be about the same as for primary lead smelters. The emission factor imputed to the latter, is 0.88 lb/ton including fugitive emissions at 10% of the amount released from the stack (Ref. 6). From this, one could infer that the above four smelters are responsible for a combined arsenic release of 59,400 lbs arsenic per year. This, however, is based on uncertain technical information since there is relatively little arsenic data for secondary lead smelters. Clearly, source testing will clarify this situation.

Considering the above emission factor as an estimated maximum, the calculated releases for the four plants are geographically located on Figure 3.2.

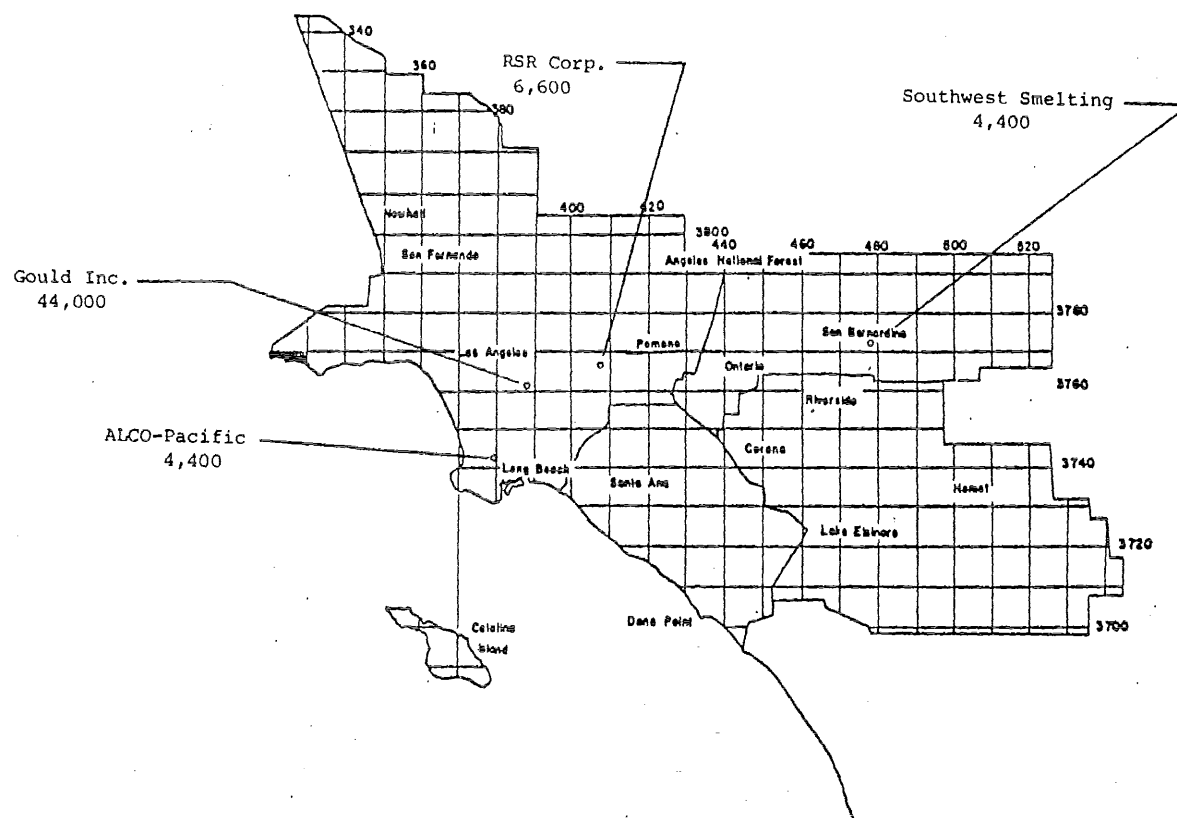


Figure 3-2. Estimated maximum arsenic releases (lbs/yr) from California secondary lead smelters.

D. Oil Combustion--

Consideration of naturally occurring arsenic in combusted fuel oils led the Union Carbide and Versar analysts to disparate conclusions (Ref. 1,2). The former regarded the arsenic emissions associated with this process as insignificant. The Versar associated an annual National release of 2.36×10^5 lbs/yr from fuel oil combustion.

The Versar estimate was based on an average arsenic level of 0.14 ppm in crude oil processed in this country. That arsenic concentration fortuitously happened to be based on analytical data obtained for California crude. They then pointed out that of the 1.85×10^{12} lbs of crude processed in 1974, 90.1% was combusted as fuel. They further assumed that all the arsenic present in the oil was emitted in some form or other to the atmosphere.

Updating the Versar data from 1974 to 1978 at an assumed increase in oil consumption rate of 6%, current national demand would be about 2.33×10^{12} lbs/yr in 1978. Burning 90.1% of this would release some 0.3×10^6 lbs of arsenic, according to Versar.

Because of the comparative volatilities of petroleum hydrocarbons and the arsenic compounds present, processing of crude should tend to concentrate most, if not all, of the arsenic into the residual oil, asphalt, and coke produced. Thus arsenic emissions would have to be associated with only those of these products (as well as any unprocessed crude) that are combusted. It can be assumed that asphalt and coke are accounted for in the unburned or 9.9% fraction of the petroleum product pool. Thus, if California's share of the national arsenic burden is 10%, some 30,000 lbs would be involved in the combustion of nondistillate fuel oils.

The consumption of residual fuel oils in California during 1977 was dominated (73%) by the utility companies. Data on sales of this commodity obtained from a DOE spokesman are tabulated as follows:

KVB 26900-836

TABLE 3-4. RESIDUAL FUEL OIL SALES IN CALIFORNIA DURING 1977
(Source: Dept. of Energy, Washington, D.C.)

| User Category | Fuel Purchased, 10 ³ Bbls. | Vol % of Total |
|------------------|--|-------------------|
| Space Heating | 2,540 | 1.4 |
| Industry | 3,941 | 2.2 |
| Oil Companies | 5,349 | 2.9 |
| Railroads | 9 | - |
| Vessel Bunkering | 35,893 | 19.9 |
| Military | 343 | 0.2 |
| Electricity | 132,555 | 73.4 |
| Miscellaneous | 54 | - |
| Total | 180,684 | 100 |

Actually, the utilities purchased 4.2% more fuel than they burned in 1977, but that difference has been absorbed since then by increased power demand.

The electrical utilities and maritime trade consume over 93% of the residual fuel oil purchased in the State. Focus therefore rests on the power plants, since most of the maritime fuel use occurs on the high seas. Thus, 73.4% of the arsenic imputed to California oil (30,000 lbs), or some 22,020 lbs, would be going into utility-class boilers. It is moot whether all of this is emitted as Versar (Ref. 2) estimates, however. Estimates for arsenic emissions from coal are about 27% of the arsenic input (Ref. 4). This would average out somewhere around 80% if the bottom ash were hypothetically mobilized. The arsenic retained apparently condenses on surfaces in the flue path and could be assumed to do this regardless of the fuel used. The value of 80% was therefore applied to oil combustion, where the soot is effectively all mobilized. This would suggest a release of 17,600 lbs arsenic per year or an emission factor of 0.13 lb arsenic per 1000 bbl residual fuel fired.

KVB 26900-836

This emission factor clearly implies an arsenic content that is higher than 0.14 ppm typical of California crudes. As pointed out earlier, however, it is assumed that in the production of a residual oil from a crude, arsenic does not volatilize and, thus, tends to remain in the process bottoms. This would then raise the arsenic level in the residual oil and exclude it from the distillates produced.

Distribution of the estimated 17,600 lbs arsenic released by power plants is shown in Figure 3-3. This distribution is prorated on the basis of electricity production for 1977 (according to "Electrical World"). Contributions to the total power produced, 88.1×10^9 kw-hr, by natural gas and jet fuel were assumed to be evenly distributed. Plants estimated to be emitting less than 500 lbs/yr of arsenic are not shown.

E. Pesticide Manufacture--

According to SRI's Suta (Ref. 4), there are three manufacturers of arsenical pesticides in California. Two manufacture arsine at three plants (Airco, Santa Clara, and Matheson Gas Products, Cucamonga and Newark), while the third, Los Angeles Chemical Co., South Gate, produces seven different arsenicals.

It was found that Airco and Matheson purchase arsine from East Coast sources and dilute the gas for resale to electronics manufacturers who use the material in the production of light-emitting diodes and other arsenide-doped solid state devices. The amounts of arsine used in this application are minor but, more importantly, releases must be negligible. Waste gas is passed through chemical scrubbers where the labile hydride is destroyed under very high reaction velocities. The same practice is observed at Airco and Matheson with returning arsine cylinders from which the residual gas must be removed. It is thus believed that this use of an arsenic compound, however volatile, does not entail significant emissions.

In the case of the Los Angeles Chemical Co., only one of the seven arsenicals associated with their product line is still produced there. This is sodium arsenite. Most of the other compounds, calcium arsenate and arsenite, lead arsenate and Paris green have not been produced there in five or more years. Production of arsenic acid was halted recently while cacodylic

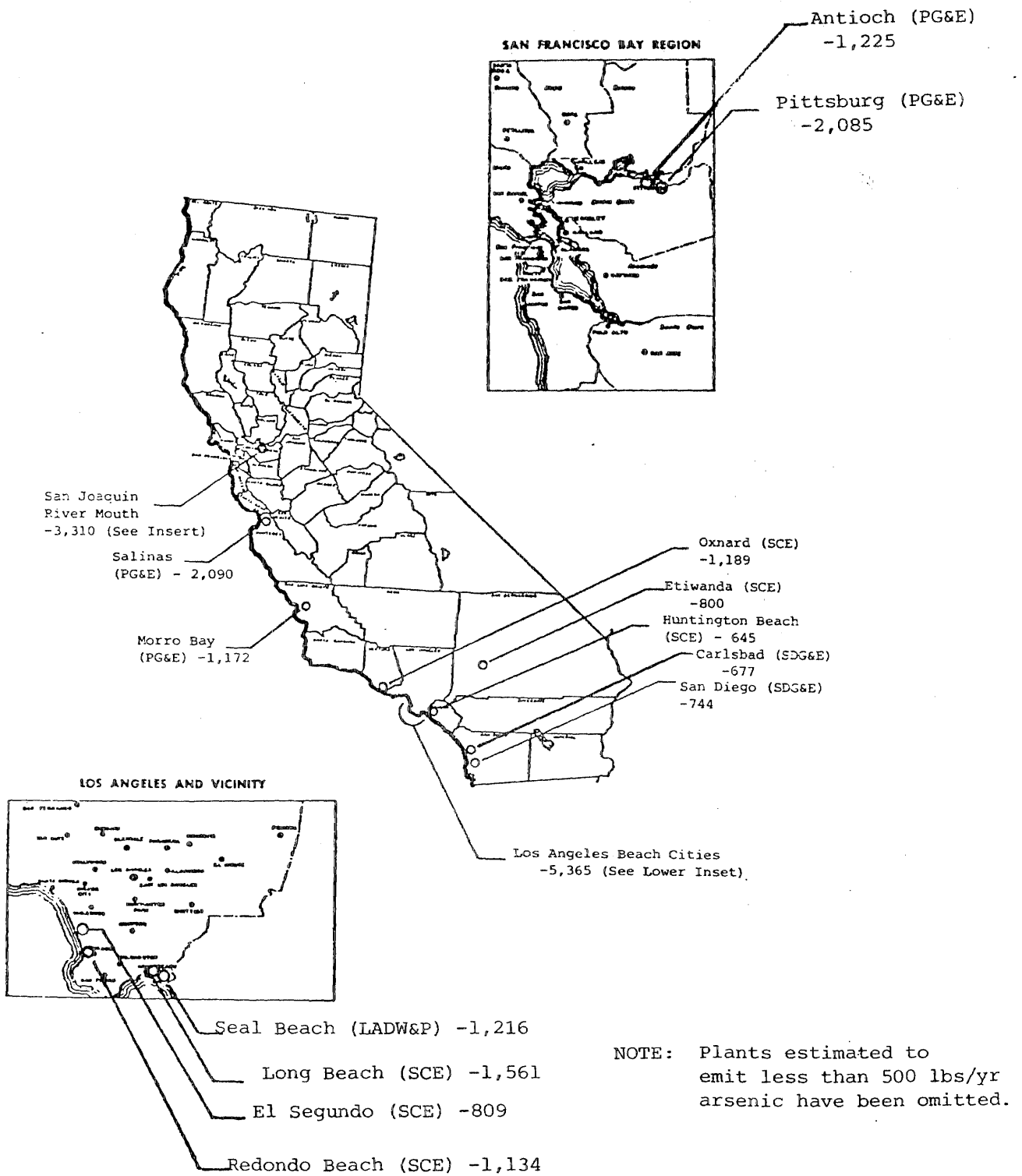


Figure 3-3. Estimated arsenic emissions associated with utility-class steam generators (lbs/yr).

acid was never made there, only jobbed. The production of sodium arsenite may also be discontinued in the near future. Although the Los Angeles Chemical Company spokesman who provided the information given here declined to offer production data, the use of sodium arsenite in the State (20,539 lbs in 1978) would not suggest a major market. Since most (99.0%) was applied to grape vineyards for an agricultural industry in which California is nationally dominant, company out-of-state sales of the arsenite were probably minor.

Assuming that Los Angeles Chemical's sodium arsenite production amounted to half of what was consumed in the State, and 1% of that were emitted, the annual release (59 lbs as arsenic) would still be equivalent to that estimated for a small power plant. Suta (Ref. 4) estimates the releases for this firm at 50 to 2000 lbs/yr depending on the (undetermined) degree of APC being practiced. This estimate, however, is based on an erroneous product line of seven arsenicals, as discussed above.

F. Glass Manufacture--

On a recently completed CARB-sponsored program (Ref. 3), KVB sampled two glass plants. The names of the owners are confidential. Plant A (test 20J) operated side-port continuous, regenerative furnaces and incorporated APC equipment on the units tested. Arsenic release was insignificant from the ESP* controlled units. At that plant, uncontrolled units were also operated and produced flint glass. These were not tested.

Plant B (tests 28S, 35S, and 35J) employed end-port fired units that were not controlled. The plant output is over 110 tons/day of glass products. Arsenic was added to the flint glass melts. Plant B operated four units, one of which was tested by KVB three times. This unit was melting for flint production. The particulates emitted averaged 10.3 ± 0.4 lbs/hr. The arsenic content of the particulate catches averaged 2.6%.

* Two sampling trains were used simultaneously to sample the inlet and exit of the ESP. A trace of arsenic was found but only in the 1 μ m cyclone and filter of the inlet sampler.

In Plant B, two of the four units were running flint melts. Although the fraction of flint glass produced was not specified, it was probably greater than 50%. Using that fraction nonetheless, the annual arsenic output from Plant B would then be calculated to be 4,690 lbs/yr.

Because of the confidentiality of these data, a mapping of glass plants will not be attempted. The CARB is, of course, aware of the identities of these plants and their locations.

G. Coal-Fired Facilities--

1. Kerr-McKee Trona Works--This facility operates two boilers (each rated at 600,000 lbs/hr steam) for the production of plant electricity, process steam and high-SOx flue gas that is also needed for the process. The units are fired with a mixture of coal and high sulfur petroleum coke. The SOx and CO₂ in the flue gas is removed by contacting it with Trona brine to induce the precipitation of sodium carbonate. SOx removal is better than 98%. It is thus highly unlikely that any arsenic could penetrate this effect.

2. Cement plants--Combustion gas from coal-fired furnaces are used to decarbonate limestone in countercurrent kiln flow. Thus all the volatiles and particulate matter in this gas stream is heavily contacted by this absorptive counterflowing process. Then, at the cooler sections of the kiln, the moist combustion gas, laden with elutriating lime fines, is passed through a bag house to remove the latter. It is thus again quite unlikely that arsenic released by the fired coal could survive to vent.

In any case, what are believed to be the seven largest cement plants in California were identified. These are:

| <u>Company</u> | <u>Location</u> |
|--------------------------------------|-----------------|
| Riverside Cement Company | Riverside |
| Monolith Portland Cement Company | Tehachapi |
| Southwestern Cement Company | Victorville |
| General Portland Cement Company | Mojave |
| General Portland Cement Company | Colton |
| Calaveras Cement Division, Flintkote | San Andreas |
| Kaiser Portland Cement Company | San Jose |

3.2 ASBESTOS

3.2.1 Production-Usage Summary

California has some of the richest deposits of asbestos in the Nation (see Figure 3-4). These are occluded principally in serpentine rock strata, which yield the commonest form of commercially usable asbestos, chrysotile. Production of asbestos in the State reached 78,390 tons in 1978, which is a major fraction of the National output. This represents a drop of about 40% from the 1966 annual production. This reduced demand reflects an on-going trend to replace asbestos with safer materials. The dynamics of the situation can be seen in the marked changes in the distribution of asbestos within the various product areas (see Table 3-5).

Five asbestos mines have operated in California, of which two now have been closed down. The remaining three mines and the estimated annual production furnished by mine executives are tabulated as follows:

| <u>Company</u> | <u>Mine Location</u> | <u>Approx. Annual Asbestos Output, 10³ Tons</u> |
|------------------------|----------------------|--|
| Atlas Asbestos Co. | Coalinga | 15-20 |
| Calaveras Asbestos Co. | Copperopolis | 32-36 |
| Union Carbide Corp. | King City | 22-31 |

The Copperopolis mine is the largest asbestos producer in the U.S. All three facilities have extensive APC systems that have been tested by EPA teams. All three facilities are regularly visited by APCD inspectors (as well as OSHA and Bureau of Mines representatives).

Asbestos is used in over 4000 different applications. Plants handling and producing such materials must protect workers by reducing air levels below two fibers of asbestos per cc of air breathed. The National Emissions



Figure 3-4. Map of California showing principal asbestos deposits
(source: U.S. Bureau of Mines)

TABLE 3-5. NATIONAL MARKET AREAS FOR
ASBESTOS: DEMAND CHANGES
OVER TWO YEAR PERIOD

| Product(s) | Asbestos Use, Percent of Total | |
|-----------------------|-----------------------------------|-------------|
| | <u>1976</u> | <u>1977</u> |
| Asbestos Cement Pipe | 25 | 19 |
| Flooring Products | 22 | 16 |
| Friction Products | 11 | 9 |
| Paper | 11 | 4 |
| Roofing Products | 8 | 35 |
| Asbestos Cement Sheet | 7 | 3 |
| Packing & Gaskets | 35 | 3 |
| Insulation | 1 | 1 |
| Textiles | 1 | 1 |
| Other | 11 | 8 |

Source: U.S. Bureau of Mines, "Mineral Commodity Summaries 1977 and 1978"

Standards for Hazardous Air Pollutants, (NESHAP - Code of Federal Regulation Part 40, Sec. 6122) requires that any vents from such works exhibit no visible emissions. Thus, industrial operations involving the conversion of asbestos into marketable products is under the control of specific State and Federal regulations, unlike other of the hazardous substances considered here.

Activities involving asbestos released that are not controlled or may not be amenable to complete control (in accordance with NESHAP) are limited. In the latter category are mining (but not the associated milling) operations. In the former are: (1) demolition of buildings containing fire proofing or acoustic and/or thermal insulation; (2) the periodic maintenance of industrial facilities incorporating such materials; (3) activities promoting erosion (natural or man-made) of asbestos-bearing open land structures; and (4) the disposal of asbestos-containing solid wastes at land fill sites. These categories were developed as a consensus of the views expressed by the following individuals contacted by the project:

- . Dr. W. M. Nicholson, Director
Environmental Health Laboratory
Mt. Sinai Hospital, N.Y.
- . Robert Fowler, Associate Director
Western Institute of Occupational and Environmental Sciences, Inc.
- . R. W. Mason, Chief
Research & Quality Assurance Branch
USEPA Region II, Edison, N.J.

3.2.2 Emission Factors

A. Mining and Milling Operations--

Release of asbestos dust in mining and milling was largely associated with the latter activity. Figure 3-5 shows the typical elements of the milling process. Under uncontrolled conditions, milling is estimated to release 100 lb asbestos for every ton of asbestos output. All other uncontrolled operations (mining, loading, hauling, unloading - or collectively, "mining") amounts to less than 10% of that release (Ref. 7). In reaction to economic incentives to reduce such losses and with the later institution of NESHAP, milling operations have come under more effective control, which is achievable considering the configuration and confinability of the process.

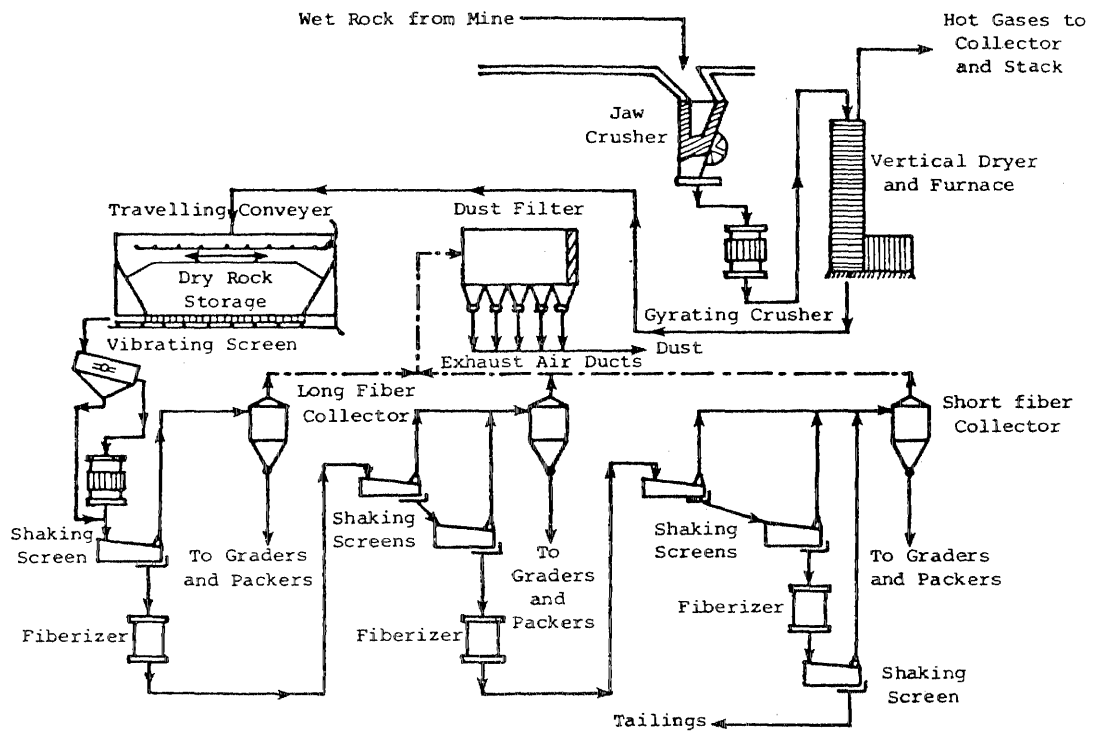


Figure 3-5. Flow diagram for typical asbestos mill.

The mining phases of asbestos production are not similarly amenable to control since many stages are carried out in the open. The EPA report cited above estimates emissions under 50% control conditions for all mining operations to be 5 lbs per ton of product. This would be equivalent to emissions in the amount of 196 tons per year based on the 1978 output from the three asbestos production facilities in the State. It would probably be much closer to the truth, however, to reckon that control is nearer 90%. This estimate would still imply asbestos emissions of 39 tons/year.

Monitoring efforts in the vicinities of the asbestos mining and milling operations unfortunately tend to predate the upgrading of APC capabilities of the California asbestos mines. John (Ref. 8), however, has published fairly recent data for atmospheric levels near the Union Carbide asbestos mine/mill at King City. Asbestos concentrations ranging from 6,000 to 1,600,000 fibers/m³ downwind and 200 to 1,000 fibers/m³ upwind were measured. The maximum downwind value, which is equivalent to 1.6 fibers/cc, approaches the OSHA MAC to 2.0 fibers/cc/. The latter, however, is a time-weighted-average (twa) for an 8-hour work shift. The twa equivalent for the ambient release downwind of Union Carbide may have been considerably lower than 1.6 fibers/cc but then the duration of the release is typically over three shifts, 5 days per week. Additional testing at these sites is clearly suggested.

The emission factors obtained from the EIS are shown in Table 3-6. It can be seen that if the ratio (49.3) of emissions for the King City/Copperopolis operations proves valid, asbestos levels in the latter town could be quite high. It should be pointed out, however, that the data are expressed as particulate rather than asbestos release rates, the fractional amount of the latter in the former not being known. In the case of the Copperopolis situation, emissions are predominately from hard rock blasting. There the serpentine contains only a few percent asbestos such that the particulates could be predominately dusts from the host mineral. Geographic locations of the three asbestos mining and milling sites are shown in Figure 3-6 together with the associated emission factors from the EIS.

TABLE 3-6. DUST EMISSIONS FROM THE ENVIRONMENTAL
INFORMATION SUBSYSTEM FOR THREE ASBESTOS MINING AND MILLING FACILITIES

| Point Source | Particulate Emissions, tons/yr |
|-------------------------------|-----------------------------------|
| Atlas Asbestos Co. | |
| Asbestos drier | 20 |
| Conveying & tailings handling | 24 |
| Milling & crushing | 12 |
| Calaveras Asbestos Co. | |
| Pit blasting | 126 |
| Ore crushing | 19 |
| Milling and grinding | 1 |
| Storage | 2 |
| Union Carbide Corp. | |
| Asbestos drying | 3 |

KVB 26900-842

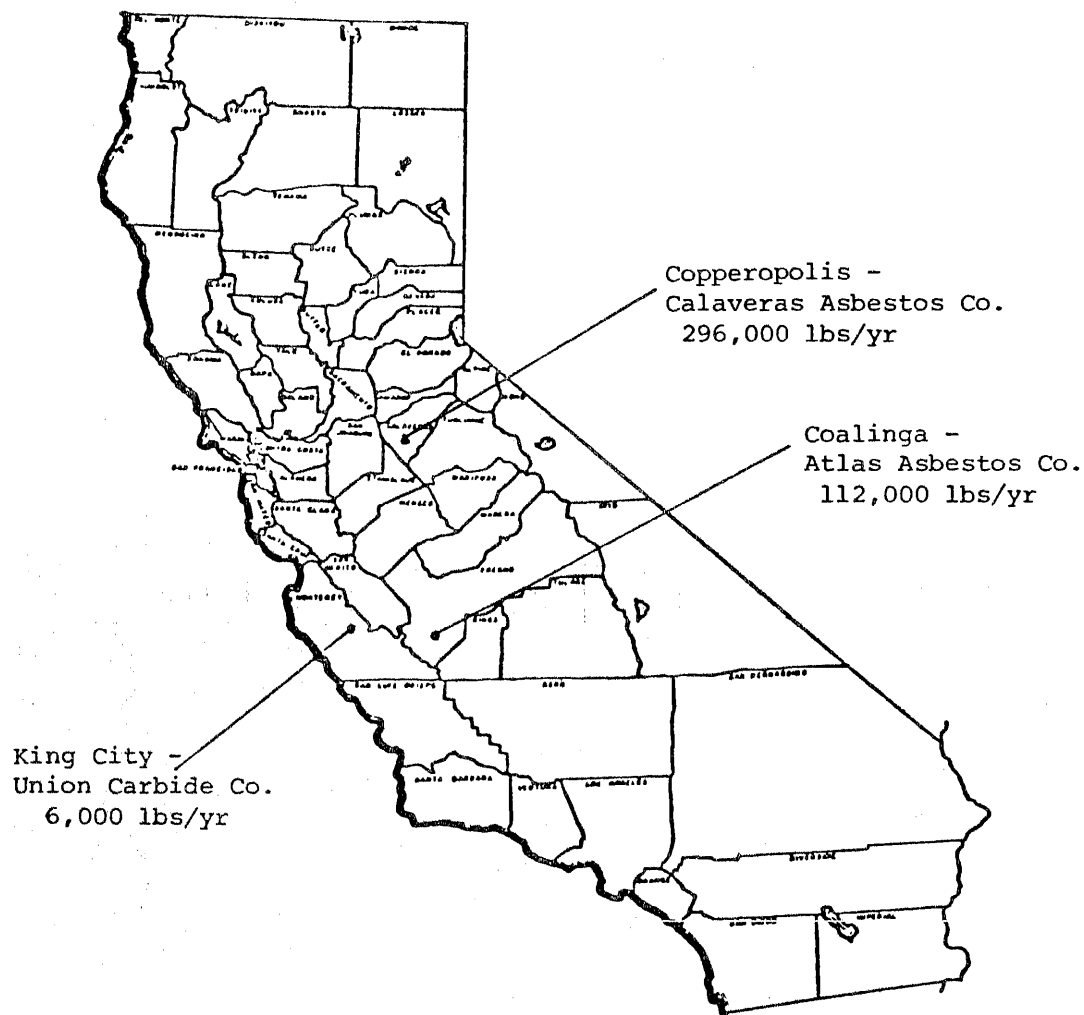


Figure 3-6 Location of asbestos mining and milling facilities in the state and emission factors.

B. Random Uncontrolled Releases--

1. Demolition of buildings--The release of asbestos from industrial and commercial buildings (family houses typically contain little asbestos) being razed depends on a number of factors, including of course the amount of asbestos containing materials used in the original construction. Since the machine-induced collapse of a structure is hardly a reproducible process, and other variables such as site, condition of insulation and weather conditions will also have an effect on the amount of asbestos released, emission factors would be difficult to estimate. It is doubtful, in fact, whether there would be any point in attempting it. It would probably be far more cost-effective to sample airborne asbestos from two or more demolitions, then design suitable control strategies if the magnitude of asbestos release does prove dangerous. Techniques that could control asbestos releases from collapsing structures would include external water sprays, draping outside walls with plastic sheeting, and selectively saturating insulated areas with dilute wetting agents.

2. Maintenance and installation of insulated materials--Refineries, natural gas compression stations, chemical process plants, centralized energy plants, shipyards, and many other facilities are continuously maintaining or installing fireproofing materials or thermal and even acoustical insulations. This entails handling of asbestos-containing materials through cutting, sawing, spraying (wet or dry) and various other mechanical operations. Based on comments offered by CALOSHA inspectors, such practices are now highly controlled. It is therefore unlikely that significant atmospheric releases can initiate from areas that are acceptable in terms of occupational hazards.

3. Erosion of serpentine deposits--There can be no question that very large quantities of asbestos become airborne due to wind erosion of the bearing serpentine deposits. Studies have been conducted to determine the compositions of windborne dusts impacting various type areas. An example of this is the work of Murchio, et al, (Ref. 9), of the University of California, Berkeley. They studied asbestos levels in the Clear Creek area, where extensive serpentine deposits occur.

It is obvious that any sampling effort directed towards establishing emission factors for naturally occurring asbestos releases would leave no practical corollary in terms of fashioning a source control mechanism. If, however, dangerous levels of asbestos are transported into urban or even rural populated areas by prevailing winds, the people affected should be warned. The opportunity would at least then exist for some kind of self-protection against such insalubrious conditions. This could range from staying indoors during dust storms to leaving the area permanently.

Another phenomenon closely related to wind erosion is the release of asbestos dusts by recreational vehicles and even hikers traversing remote serpentine areas. Although such activities probably do not impact populated areas, the levels of asbestos inhaled by the recreationists themselves could be extremely high.

4. Solid waste disposal--The solid wastes produced during the manufacture and use of asbestos-containing products and the demolition of structures are typically buried at dumps. In California, these disposal sites are predominately land-filled so that emissions are much lower than for open (particularly burning) dumps. Emissions would expectedly occur during actual dumping and waste burial.

Regulation of land-fill operations is handled by the Solid Waste Management Board, the county solid waste enforcement agency, the State Water Resources Department, the Health Department (Hazardous Materials Section), and CALOSHA. The net effect has been that asbestos-containing wastes must be wetted down and drummed before dumping is allowed. The drums are then immediately covered with earth. Class 2 sites may be used, although most asbestos wastes are going into Class 1 dumps. Asbestos releases from such operations are probably now quite minor.

C. Utilization of Asbestos in Manufactured Products--

A number of use points exist where asbestos in refined or formed condition is used in the manufacture of asbestos-bearing products. A breakdown of the principal consumption areas is as follows:

- . Floor coverings
- . Ready-mix insulation
- . Fire-resistant cloth tape, rope and miscellaneous
- . Asbestos cement piping
- . Roofing products
- . Filters, fibers, felt, and paper
- . Filled rubbers, coatings, plastic resins
- . Gaskets, packings, frictional shapes

A list of the major users of asbestos in the State was prepared for the U.S. EPA in 1973. This list, although in obvious need of correction and updating, is included as Appendix A. All of these businesses would be expected to evince no visible asbestos emissions if compliant with regulations. The question then is what release rate of asbestos from an industrial complex would still furnish Ringelmann measurements of zero.

In addition to the data shown in Table 3-6, the EIS provides emission factors for two of the largest asbestos processing plants in the State. These are both Johns Manville operations; one is at Long Beach (asbestos-cement pipe) and the other at Stockton (transite and plastic pipe). The former is listed to have an annual particulate release of 1 ton/yr while the latter is rated at 19 tons/yr. As in the case of mining operations, the fractional amount of this dust that is asbestos is uncertain. In any case, a range of dust releases from 0.2 to 4 lbs/hr from plants equipped with multiple exhaust ducts would seem consistent with an invisible atmospheric release. Dust release points are in the blending rooms where asbestos is mixed with lime, sand and other ingredients. The dry-basis asbestos content of this mix is about 15%. If the dust released contained this amount of asbestos, then the release would be 300 and 5700 lbs/yr for the Long Beach and Stockton plants respectively.

In investigating the Johns-Manville releases, the South Coast AQMD and the San Joaquin County APCD were consulted. In the latter case, it was stated that no attempt had been made to determine what fraction of the dust released from the Stockton plant (bag house) was actually asbestos. The SCAQMD had attempted to do this in the case of the Long Beach plant but the results

provided by the laboratory retained were questionable (very few laboratories are capable of quantifying this substance reliably).

Johns-Manville reported to the project sampling of the six vents of the Stockton plant specifically for asbestos over a four year period. These data, based on optical microscopy showed an annual plant release of only 38 lbs total of that mineral. As is pointed out in the Task IV volume, optical microscopy furnishes unacceptably low results.

If an average release rate of 200 lbs/yr dust from major asbestos-handling plants is assumed, a quantity for the total release from the asbestos-user category can be roughly estimated. Appendix A is comprised of 117 listings which is probably an adequate count of the major asbestos users even if compositional errors are recognized. The major users would then emit an estimated 23,500 lbs/yr of dust. It can further be assumed that there are also at least five times the number of major users that are minor consumers of asbestos. If we assume that emissions from all the minor users are equal to the total from all the major users, an annual dust release of 47,000 lbs is seen. Distribution of this burden would be predominately in heavily populated areas of the State. The fractional amount of these dust releases that is asbestos is highly uncertain but would probably vary widely with the processes involved.

Ambient levels of asbestos have been measured, although the process is compromised by reliability problems in the quantitation of catches obtained. That issue notwithstanding, data were selected by Wesolowski (Ref. 10) to illustrate levels in the Berkeley-San Francisco area. Values ranging from 1.5 to 72 ng/m³ were cited, with a range average of about 35 ng/m³ being estimated. This is equivalent to about 0.4 fibers/cc of air. This is 20% of the OSHA MAC, a surprisingly high ratio for open urban air. Source testing at selected plants would be useful in determining to what degree such releases can be associated with ambient urban asbestos levels.

3.3 BENZENE

3.3.1 Summary of Utilization and Releases

California is a minor producer and user of benzene. Of the 11.4 billion lbs consumed in the U.S. in 1977, only 1.5% of this was produced in California. The consumption of benzene in the state about equalled production. Two refineries were responsible for this output, while three plants constituted the major consumption points. A large amount of the benzene produced was converted to cumene (a phenol intermediate) and detergent alkylate (dodecylbenzene). Some 22 million lbs were estimated to be exported. Solvent uses for benzene have diminished greatly because of hygienic concern.

Apart from the benzene market itself, the chemical also occurs in gasoline, which poses the greatest emission problem. Another source of

TABLE 3-7. ESTIMATED BENZENE EMISSIONS
IN THE U.S. FROM VARIOUS SOURCES

| Emission Source | Benzene Emissions, 10 ⁶ lbs/yr | |
|---|---|---------------------------|
| | PEDCO Estimate (Ref. 11) | GCA Estimate (Ref. 12) |
| Gasoline Engines | 443.6 | 909 |
| Petroleum Refineries | 4.1 | 58 |
| Coke-Oven Operations | 7.8 | No Estimate |
| Benzene-Based Syntheses | 60.0 | 58 |
| Storage and Distribution of Gasoline & Benzene | 24.8 | 69 |
| Solvent Operations | Unknown | 55 |
| Other Miscellaneous | 4.0 | No Estimate |
| TOTAL EMISSIONS | 544.3 | 1,149 |

benzene emission is the coking oven, which points to the Kaiser steel mill in Fontana. Benzene releases from all sources are shown in Table 3-7.

KVB 26900-836

Inventories of emission from these and other sources have been estimated in two recent EPA reports. The data posited by PEDCO (Ref. 11) and GCA Corporation (Ref. 12) in their independent studies are compared in Table 3-7. While these data reflect obvious differences, the authors agree only too well that above 80% of the total benzene emissions derive from the automobile.

3.3.2 Benzene Production and Major Uses

A. Producers--

According to the Benzene Annual, the only producers of benzene in California are the ARCO refinery, Wilmington, and the Chevron U.S.A. refinery, El Segundo. Production for 1977 was listed at 87.5 million lbs at each, which is well below capacity, particularly for Chevron (160×10^6 lbs/yr). With the exception of some 22 million lbs exported by ARCO, all of this production is consumed in California. No industrial benzene was produced in California from coal or coke retorts.

Both the Chevron U.S.A., El Segundo, and ARCO, Carson, refineries produce benzene by the catalytic dehydrogenation of naphthenic stocks, followed by the refining of the aromatic product. A simplified schematic of one version of this process is shown in Figure 3-7.

By definition, naphthene is cycloparaffinic and because of comparative ease of formation, predominates in five-and-six-carbon rings. Dehydrogenation of cyclohexane produces benzene and three mols of hydrogen or the alkylbenzene corresponding to any alkylated cyclohexane starting form. The catalyst promoting this effect is platinum or an alloy thereof. At Chevron, platinum-rhenium catalyst (Rheniforming process) is used while at the ARCO plant, a straight platinum catalyst is employed.

In the Rheniforming process used at Chevron, El Segundo, the reformate is distilled. Following the dehydration or reforming process the benzene-rich cut is then extracted to feed back undesired naphthenic and paraffinic material acquired in the same boiling cut. Benzene is then stripped from the extraction solvent, the latter being recycled in the process. At Chevron, solvent refining involves the use of phenol, while at ARCO, the solvent is a mixture of glycols and water (Udex process).

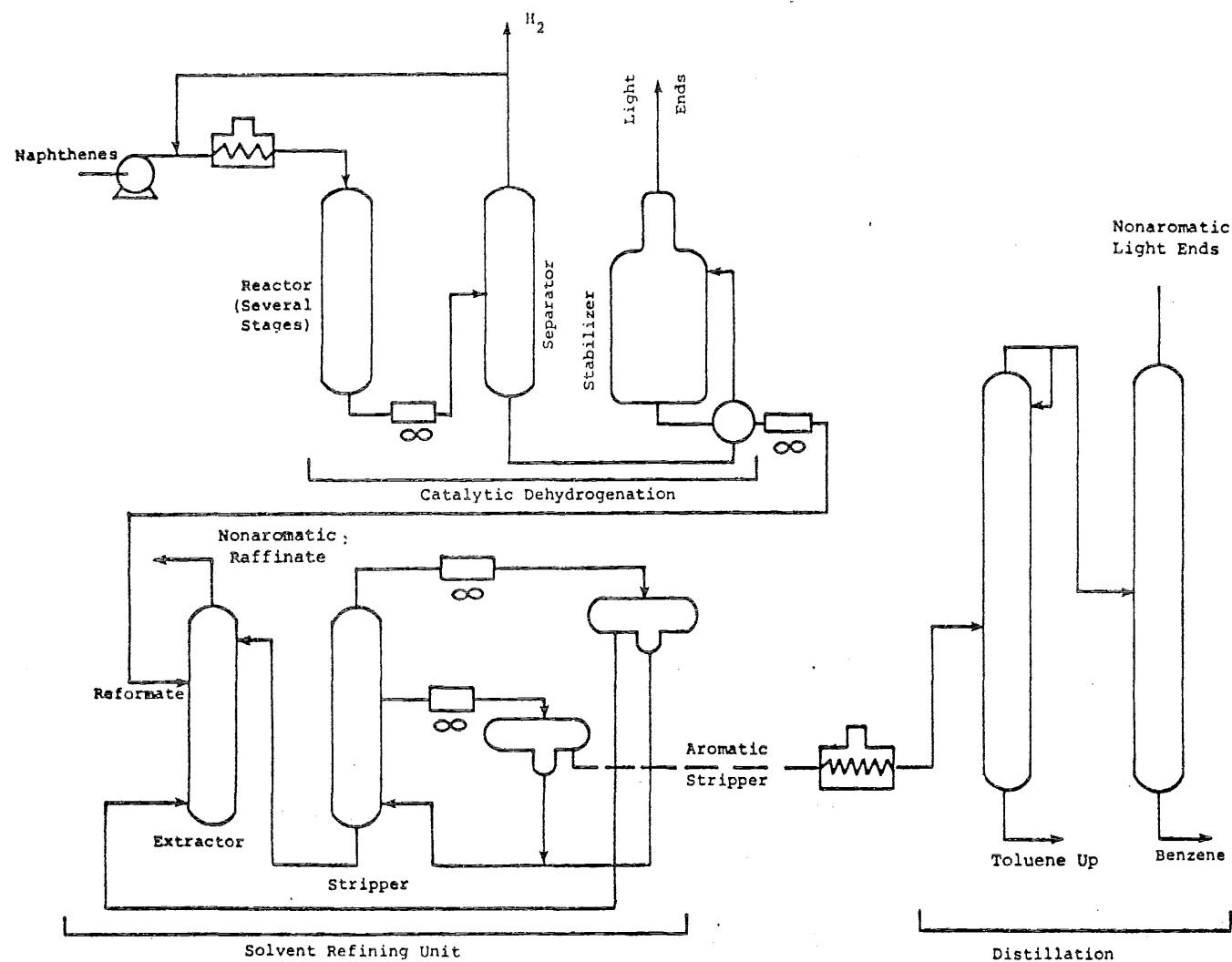


Figure 3-7. Overall benzene production process.

With the exception of benzene storage, which is done in floating roof tanks, emissions from the enclosed, benzene processes must occur through fugitive sources, such as valves, flanges, pump and compressor seals and related devices.

B. Major Users--

The principal users of benzene in California are listed in Table 3-8. The benzene inputs are about stoichiometric with respect to the rated output capacities of the Chevron (El Segundo) and WITCO plants but well below capacity in the case of the Chevron-Richmond phenol/detergent alkylate operation. Chevron, Richmond, was contacted about this who pointed out that their benzene feedrate for 1977 was 36,000 gals per day. This is equivalent to a usage rate of 96.3×10^6 lbs/yr. Chevron, Richmond, also pointed out that all of its benzene feed is converted to detergent alkylates, none being used for phenol synthesis as stated in Benzene Annual.

Other consumers have been listed (Ref. 13) in the literature (together with benzene emission factors, in one case) that do not input benzene at all. Ferro Corporation, Santa Fe Springs, produces phenol but from crude phenolic wastes, not benzene. Specialty Organics Co., Irwindale, separates dichlorobenzene into its isomers but does not synthesize the mixture from benzene. Montrose Chemical Co., Torrance, purchases over 50×10^6 lbs of benzene per year but converts it to chlorobenzene in Henderson, NV. This material is then shipped to Los Angeles where it is converted to DDT (for export). The above information was obtained by telephoning various executives of the companies concerned.

KVB 26900-836

TABLE 3-8. PRINCIPAL BENZENE CONSUMERS
IN STATE OF CALIFORNIA - 1977 DATA

SOURCE: Benzene Annual

| Company and Location | Benzene Consumed 10^6 lbs/yr | Supplier | End Product (s) | End Product Plant Capacity 10^6 lbs/yr |
|-------------------------------|--------------------------------------|---------------------|--------------------|--|
| Chevron U.S.A., El Segundo | 65.6 | Internally Made | Cumene | 100 |
| Chevron U.S.A., Richmond * | 21.9 | Chevron, El Segundo | Phenol | 55 |
| | 36.5 | ARCO, Wilmington | Detergent | 200 |
| Witco, Carson | 29.2 | ARCO, Wilmington | Detergent | 55 |

* According to Chevron, these data are incorrect; see Section 3.3.2.

3.3.3 Coking Operations

The thermal conversion of coal to coke expectedly releases large quantities of hydrocarbons. With appropriate equipment and process conditions, yields of light oils and tar (the "benzol condensate") can be recovered in commercial quantities. In steel production, the coking oven design provides poor vapor containment. Emissions occur from various points during charging, pushing and quenching operations; from doors during the coking cycle; and from the waste-gas stack. The Kaiser Steel Company mill at Fontana is the only coal-coking operation in the State. This plant operates 7 coking batteries incorporating a total of 315 ovens having a coke production capacity of 1,547,000 tpy. The benzol condensate amounted to some 57×10^3 lbs in 1977. The tar fraction is sold to Koppers Co., Fontana. The secondary light oil, rich in benzene, goes to Western Fuel Oil, San Pedro, where it is blended with fuel stocks. This information was supplied by a company executive at Kaiser.

3.3.4 Petroleum Production, Storage & Marketing

Two refineries were discussed earlier in the context of industrial benzene production. While benzene emissions must be associated with such operations, other refineries (including ones that do not produce gasoline) need also be considered. Benzene is a natural constituent of crude oil and persists in the refining processes. For example, Runion (Ref. 14) reports an average of 1.25 Vol. % benzene in three grades of Gulf Corporation gasolines obtained from six different refineries. Similarly, NIOSH (Ref. 15) tested several different brand gasolines of different grades and reported a range of benzene contents from 0.88 to 1.49 Vol. %. At the present time, CARB estimates that the average benzene level in all gasolines is between 1.24 and 2.5 Vol. %. This higher value is believed to reflect the current trend to increased aromaticity in gasoline production. This is required to compensate for government-directed decreased usage levels of tetraethyllead (TEL).

Benzene emissions from a refinery include both process and non-process emissions. The former include those emanating from: (1) light and heavy naptha streams from the crude unit; (2) fluid catalytic cracking units; (3) hydro-cracking units; (4) gasoline mixing tanks; and (5) fugitive sources. Non-process emissions originate from wastewater treatment systems, heaters, boilers, and product storage tanks. In the case of refineries that produce benzene as well as gasoline, emissions of the former are bound to increase as a result of storing the refined benzene itself. Finally, emissions of benzene are associated with the in-and-out flow of crude and product to and from the refineries. Radian estimated a total U.S. evaporative hydrocarbon emission rate of 1.77×10^9 lbs/yr from crude oil (oil field) production and transportation (Ref. 16).

Transportation of gasoline (and industrial benzene) is also an obvious source for additional emissions. A complex system of pipelines,

tank trucks, rail tankers, barges, and ocean tankers connects bulk terminals, bulk plants, service stations, commercial yards, and trans-shipment points. It is estimated (Ref. 11) that 3.75×10^6 lbs/yr benzene are emitted in the U.S. from gasoline transportation operations, and an additional 6.6×10^6 lbs/yr from the operation of service stations.

3.3.5 Automobile and Other Vehicular Traffic

Hydrocarbon, including benzene, emission from gasoline engines (and even Diesel engines, but at lower levels) is a well studied and published subject and need not be reviewed here. In cars with and without catalytic converters, benzene appears to enrich in the exhausted hydrocarbons. Unfortunately, only one set of data is available (Ref. 17) in which the benzene contents of both the fuel and the exhaust hydrocarbons were determined. In this case, only one car not equipped with a catalytic converter was tested (with nine newer models). The benzene content of the unleaded fuel used in all was only 0.03 wt %. In any case, the results of the standard dynamometer testing showed that the average benzene/THC ratio for the fuel Vs. that of the exhaust gas increased 84 times for the older car (1972 Chevrolet) and an average of 70 times for the catalyst-equipped cars. The latter group emitted about 40% on the average of the THC exhausted by the older car. This benzene enrichment effect is consistent with the refractory nature of benzene, but obviously cannot be extrapolated to fuels containing "normal" levels of benzene (~2 Vol.%).

Data obtained by Olson Laboratories (Ref. 18) for three gasolines of graded aromaticity burned in six variously APC-equipped automobiles are itemized in Table 3-9. Although only a PONA^{*} analysis was available for the gasolines used, it can be seen that the benzene content of the THC's emitted by cars burning a typically aromatic rich fuel averages about 5%.

3.3.6 Solvent Operations and Other Miscellaneous Sources of Benzene Emissions

A. Solvent Uses--

SRI's Mara and Lee (Ref. 13) identified 13 types of operations which consumed benzene as a solvent. This list was reduced to five, based on

^{*} Class analysis for: paraffins, olefins, naphthenes, and aromatics.

TABLE 3-9. EXHAUST EMISSIONS OF BENZENE FROM AUTOMOBILES
BURNING THREE UNLEADED GASOLINES OF VARYING AROMATICITY
Source: Olson Laboratories (Ref. 18)

| Automobiles | Benzene Emissions, g/mile (wt.% of THC) | | |
|--|---|---------------------------------|--------------------------------|
| | Typical Clear I, 35% Aromatic | Indolene Clear, 22% Aromatic | High Alkylate, 10% Aromatic |
| 1972 Olds Delta 88 with Base-Metal oxidation catalyst & EGR* | 0.025 (7.7) | 0.026 (6.0) | 0.015 (2.9) |
| 1971 Ford LTD with ESSO Ram Reactors & EGR | 0.008 (4.5) | 0.005 (4.3) | 0.002 (1.8) |
| 1971 Plymouth Fury III with platinum oxidation cata- lysts & EGR | 0.023 (5.8) | 0.015 (3.9) | 0.008 (1.5) |
| 1972 Ford Torino with platinum oxidation catalyst & EGR | 0.030 (4.2) | 0.025 (3.2) | 0.011 (1.3) |
| 1971 Plymouth Fury III with Ethyl Lean reactors & EGR | 0.022 (5.0) | 0.015 (3.5) | 0.006 (1.7) |
| 1970 Chevrolet Impala with GEM Monel NOx re- duction catalyst & plati- num oxidation catalyst | 0.011 (3.7) | 0.009 (2.5) | 0.004 (1.1) |

*Exhaust Gas Recirculation

KVB 26900-836

employee count, as representing the solvent sector of benzene users. These industries (the number of plants in California are shown in parentheses) are involved in the manufacture of the following items:

- . Tires and Innertubes (22)
- . Rubber & Plastic Footware (3)
- . Plastic Materials & Synthetics (51)
- . Floor Coverings (62)

The authors state that 32% of such operations, based on employee counts, are located in California and Georgia (146 and 270 plants total, respectively). Because of the declining usage of benzene in such applications, the SRI authors declined to estimate emission factors.

B. Miscellaneous Other Sources--

Other sources of benzene emissions have been identified (Ref. 11). These include coal gasification, refuse incineration, forest and structural fires, and agricultural burning. The first two operations are not practiced in the State. Benzene emissions from uncontrolled fires have yet to be measured. Emissions from the burn-off of agricultural wastes have only been perfunctorily considered. The practice, however, is considerably restricted in the State. Burning of ligneous substances can be expected to produce benzene. In studies sponsored by the CARB and conducted at UC Riverside (Ref. 19), emissions were analyzed from the burning of the following eight crop wastes: barley, wheat, sorghum, almond, grape, corn, rice, and peach. The benzene content in the volatile hydrocarbons speciated in the flue of the portable incinerator ranged from 19 to 51% and averaged 33% for the eight types of crop-wastes. Because of the difference in the combustion effects involved, development of emission factors from these data that would be applicable to open-field burns would not be acceptable.

3.3.7 Emission Factors

A. Benzene Production and Major Uses--

1. Benzene production--In the PEDCO study (Ref. 11), benzene emissions were derived from AP-42 data and estimated compositions of emitted vapors. Based on the degree of APC practiced, a weighted estimate of 0.759 lb/1000 bbl crude fed was derived. Fully controlled refineries were assigned a factor of 0.415 lb/1000 bbl crude. This factor, however, is basically a gasoline refinery factor and does not take into account benzene production. It was, therefore, considered appropriate to add to the PEDCO estimate by assuming an additional benzene loss of $0.5 \text{ lb}/10^3$ gals benzene produced in the manufacture of that chemical.

Benzene losses occurring during storage and handling of crude oil were excluded from refinery emissions and were treated as an isolated topic by the PEDCO authors. They used factors developed at Radian (Ref. 16) for total hydrocarbon releases involved in crude oil storage and working, proportioning these to benzene factors. These estimates in lbs of benzene emitted per 1000 bbls of crude input were 0.125 for storage and 0.071 for working losses. These factors were included in the estimates for total refinery benzene emissions given here.

Emission factors for gasoline storage and withdrawal are also applied. Based on PEDCO's estimates these were found to be 1.66×10^{-4} and 1.95×10^{-6} lb benzene per thousand gallons of gasoline, respectively.

Standing and withdrawal losses of benzene from fixed-roof storage tankage were also derived. Based on the National usage of tanks and assuming 30 days product residence time in tanks normally 75% full, an emission factor of 0.01 lb/day per 1000 gals of product was estimated. Withdrawal losses were estimated at 0.0074 lb/day per 1000 gals of benzene.

The above sets of factors were then applied to furnish the estimated emissions shown in Table 3-10 for the two Los Angeles refineries producing benzene (12×10^6 gals/yr each). These mass values are considerably lower than those that were calculated from the benzene emission factors that were

TABLE 3-10. ESTIMATED BENZENE
EMISSIONS FROM TWO BENZENE PRODUCING GASOLINE REFINERIES

| <u>Emission Source</u> | <u>Benzene Emitted, lbs/yr</u> | |
|---------------------------------|--------------------------------|------------------------|
| | <u>Chevron El Segundo</u> | <u>ARCO Carson</u> |
| Crude Storage & Handling | 16,454 | 13,235 |
| Gasoline Production | 34,839 | 28,023 |
| Benzene Production | 6,000 | 6,000 |
| Benzene Storage & Withdrawal | 2,239 | 2,239 |
| Gasoline Storage & Withdrawal | 346 | 222 |
| TOTAL | 59,878 | 49,719 |

Emission factor source: PEDCO (Ref. 11)

KVB 26900-836

developed by Patterson (Ref. 12) or Mara and Lee (Ref. 13). The latter authors assumed that benzene emissions at benzene-producing refineries would be just twice that of the conventional refinery and perhaps did not consider the impact of APC equipment.

2. Major benzene users--About 80% of the benzene produced in the State is consumed in three facilities synthesizing cumene (Chevron-El Segundo) and detergent alkylate (Chevron-Richmond and Witco-Carson). The annual benzene consumption for these three plants is estimated at 65.6, 96.3 and 29.2 million lbs, respectively. Union Carbide (Ref. 20) has developed benzene emission factors for both types of processes and for phenol. The benzene releases derived from these factors and assuming full capacity production are as follows:

TABLE 3-11. ESTIMATED BENZENE EMISSIONS
FROM THREE CONVERSION PLANTS

| Company and Location | Material Produced | Annual Product Capacity, 10 ⁶ lbs | Emission Factor, lb Benzene/lb Prod.* | Annual Benzene Release, lbs |
|----------------------|-------------------|--|---------------------------------------|-----------------------------|
| Chevron, El Segundo | Cumene | 100 | 2.45×10^{-4} | 24,500 |
| Chevron, Richmond | Detergent | 200 | 5×10^{-4} | 100,000 |
| Witco, Carson | Detergent | 55 | 5×10^{-4} | 27,500 |

* Source: Union Carbide (Ref. 20)

The Union Carbide benzene emission factors are based on actual test data. These data, however, range widely and possibly reflect regulatory inconsistencies from state to state. Union Carbide did, however, tend to use benzene release data for facilities that obviously were regarded as not under the best possible APC management.

In the case of Witco, AQMD measurements resulted in an assignment of 15.6 tpy THC emissions. Witco estimates that 85% of that would be benzene, or 26,520 lbs/yr. This agrees well with Table 3-11.

Considering their benzene consumption data, it appeared reasonable to assume full-capacity operation for Chevron, El Segundo, and Witco. In the case of Chevron, Richmond, it is possible that the plant is operating at well above (50-60% KVB estimate) its rated capacity.

Not included in the Table 3-11 emission estimates were values for the loading, transit and off-loading for benzene. Benzene flow between Witco and ARCO is by pipeline. Chevron, El Segundo produces its own benzene used in cumene production and the benzene losses calculated (PEDCO emission factors) for the suppliers of and the Chevron plant at Richmond were too small to be noted.

Comparing the Table 3-11 values with those reported by SRI (Ref. 13) very close agreement is noted for the Chevron, El Segundo plant (24,255 vs. 24,500 lbs/yr). In the case of the other Chevron plant, SRI's estimates are about five times higher. Siting of benzene production and consuming plants is shown in Figure 3-8 together with estimated benzene emissions.

B. Coking Operations--

Emission factors for benzene released during steel mill coking are hardly reliable. Based on European (USSR and Czechoslovakia) experience, the values clearly demand validation by domestic source testing. This need is particularly emphasized in considering the higher benzene release rates calculated for the Kaiser Steel mill at Fontana:

ESTIMATED BENZENE EMISSION FROM KAISER STEEL MILL, FONTANA

| Reference | Plant Emission Factor, g/sec | Benzene Emitted lbs/year | Average |
|--------------------|---------------------------------|-----------------------------|-----------|
| PEDCO (Ref. 11) | 4.4 | 307,740 | } 223,400 |
| SRI (Ref. 13) | 2.0 | 139,048 | |

The differences in the two emission factors largely result from the benzene content in the hydrocarbon effluents assigned by each group. SRI estimated 1.32% and PEDCO 2.23% as the benzene content for the hydrocarbons released.

KVB 26900-836

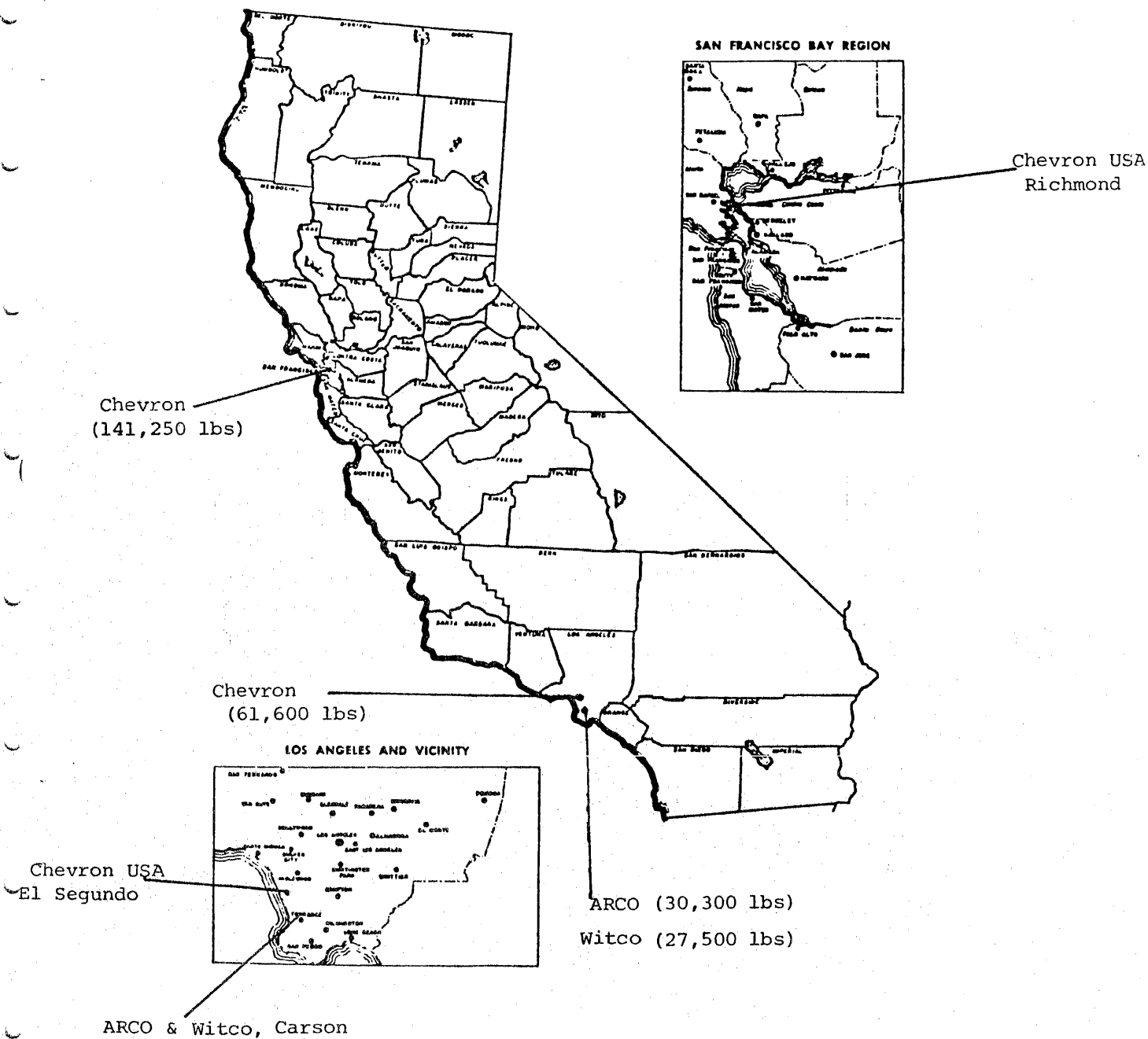


Figure 3-8. Benzene production and major user sites and estimated annual emissions.

C. Petroleum Production, Storage and Marketing--

1. Crude oil operations--Excluding offshore production on Federal lease sites, 1978 production of crude in California is estimated by the California Division of Oil and Gas at 334 million bbls. This is based on a linear extrapolation of data for nine months of production. The total yield includes about 45 million bbls of off-shore production from state leased plots. This fraction was retained for emission calculations while production of the Federal lease-holders (13.3×10^6 bbls) was excluded. This arbitrary distinction was based on the relative distances of the two types of operations with respect to shore line.

Data obtained in oil fields in Monterey and Santa Cruz Counties (Ref. 21) indicated a net emission rate for crude production operations of 107 lbs hydrocarbons for every 1000 bbl of crude produced. Assuming, as PEDCO did, that these emissions contain 0.06 wt. % benzene (probably overly conservative), the emission rate for benzene would be 0.064 lb/1000 bbl crude. This would be increased to 0.164 when evaporation losses associated with crude transportation are factored in (Ref. 16). Based on the State's oil production for 1978, this would imply a release of only 54,776 lbs of benzene from the entire population of oil producing facilities in the State. Because of the dispersion factor, impact on adjacent urban areas would probably not be warranted. It would be well, however, to check the estimated factors by conducting specific benzene measurements in selected fields.

2. Refinery operations--The inventory of gasoline refineries in the State includes the two refineries (Chevron, El Segundo and ARCO, Carson) considered earlier which also produce industrial benzene, six petroleum plants that produce asphalt but not gasoline and 24 gasoline refineries. The asphalt plants are identified in Table 3-12.

KVB 26900-836

TABLE 3-12. PETROLEUM PLANTS PRODUCING ASPHALT*
(But Not Gasoline)

| Firm | Location | Crude Oil Input Capacity 10 ³ bbls/day |
|---|-------------|--|
| Road Oil Sales | Bakersfield | 1.6 |
| Edgington Oil Co. | Long Beach | 29.0 |
| Newhall Refining Co. | Newhall | 7.5 |
| Golden Bear Division, WITCO Chemical Corp. | Oildale | 10.5 |
| San Joaquin Refining Co. | Oildale | 17.0 |
| Lunday-Thagard Oil Co. | South Gate | 5.0 |
| TOTAL | | 70.6 x 10 ³ bbls/day |

Source: Oil & Gas Journal

Added to the input capacities of the gasoline-refining plants, asphalt producers represent an additional 3.6% to the State's crude oil consumption. Although operations at asphalt plants are considerably different than at gasoline refineries, the small population of these plants did not warrant the development of type-specific emission factors. They are, therefore, treated as gasoline refineries.

The benzene emission factors for refineries have actually been introduced previously under the section dealing with benzene producers. Benzene emission rates were based on both gasoline operations and benzene production.* Releases associated uniquely with the latter were isolated so that the balance of the emissions would be identified with normal gasoline refining. These emission rates are tabulated below again for convenience (Table 3-13).

*See Table 3-10

TABLE 3-13. ESTIMATED BENZENE EMISSION RATES
FOR OIL REFINERIES

| Source | Emission Rates, lbs. Benzene |
|---------------------|--|
| Crude Oil | |
| Storage | 3×10^{-3} |
| Working Loss | 1.7×10^{-3} |
| Combined | $4.7 \times 10^{-3}/10^3$ gals crude |
| Refinery Operations | $1 \times 10^{-2}/10^3$ gals crude |
| Gasoline | |
| Storage | 1.66×10^{-4} |
| Withdrawal | 1.95×10^{-6} |
| Combined | $1.68 \times 10^{-4}/10^3$ gals gasoline |

* Source: PEDCO (Ref. 11)

The emission assignments for the California refineries are itemized on Table 3-14 and these data are mapped sectionally on Figure 3-9.

Again, these values are considerably lower than the estimates offered by other workers (Refs. 13 & 16) who acknowledged a lack of test information on refinery emissions. Fortunately, on its survey of hydrocarbons in the South Coast Air Basin (Ref. 22), KVB was able to conduct an extensive hydrocarbon survey at one gasoline refinery. This was the Douglas Oil Company facility in Paramount. Testing there was not entirely comprehensive but extensive enough to permit fairly reliable extrapolations. Results of the sampling program are tabulated in Appendix B. Points sampled included hydrocarbon measurements of the following:

- . Stack Emissions
 - Heaters
 - Boilers
 - Flaring
 - Asphalt Blowing
 - SCOT Incinerator

TABLE 3-14. ESTIMATED BENZENE EMISSIONS FROM GASOLINE REFINERIES
AND ASPHALT PLANTS OPERATING IN THE STATE OF CALIFORNIA

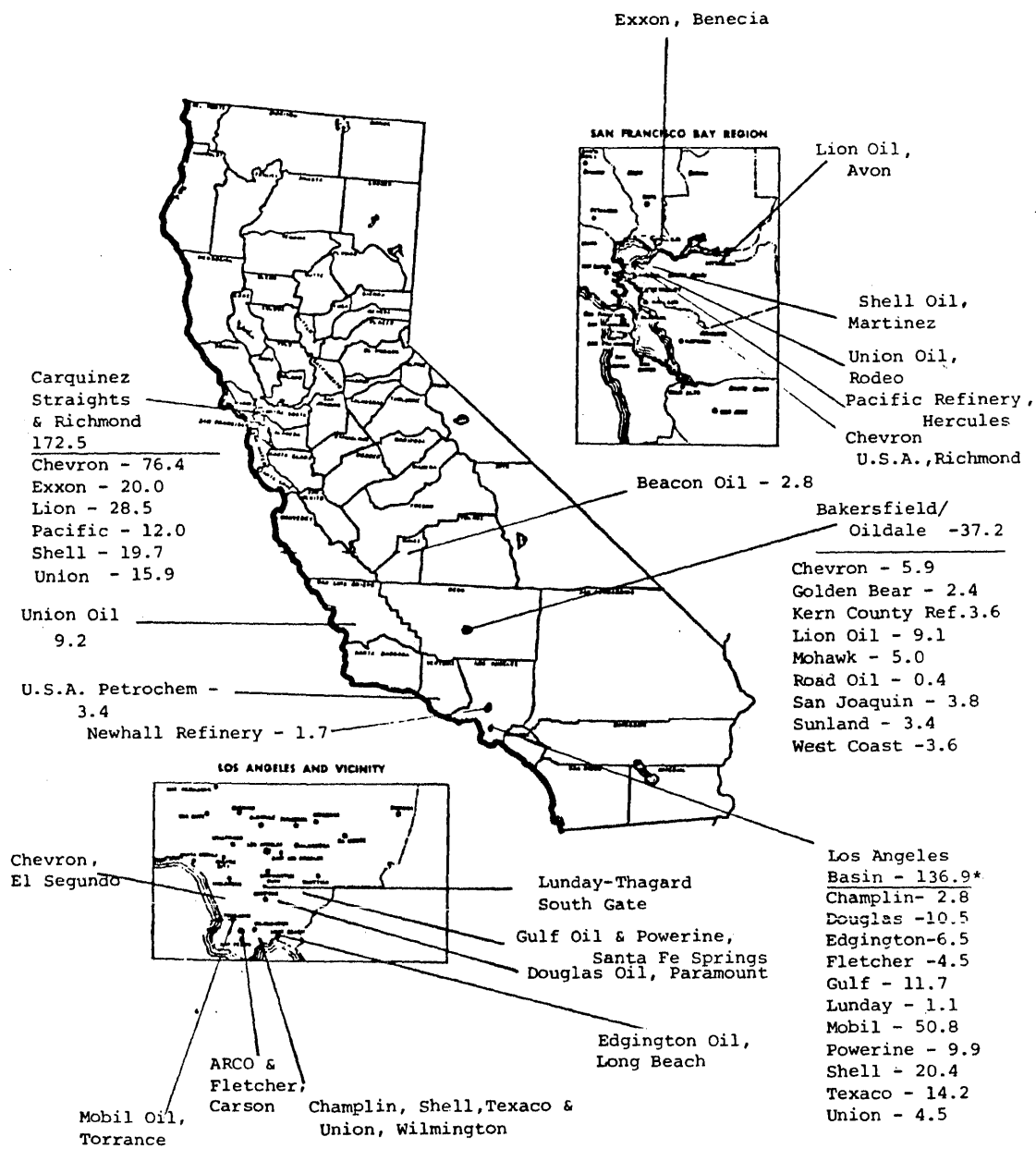
| Company | Location | Crude Oil Operating Capacity, 10 ³ bbl/day | Gasoline Prod. Capacity, 10 ³ bbl/day | Benzene Emission, 10 ³ lbs/yr |
|------------------------|------------------|--|--|---|
| ARCO | Carson | 185 | 87.4 | See Fig. 3-8 |
| Beacon Oil Co. | Hanford | 12.4 | 2.6 | 2.8 |
| Champlin Petroleum Co. | Wilmington | 30.7 | 3.0 | 6.9 |
| Chevron U.S.A. | Bakersfield | 26.0 | 2.6 | 5.9 |
| Chevron U.S.A. | El Segundo | 230 | 125.4 | See Fig. 3-8 |
| Chevron U.S.A. | Richmond | 338 | 145.8 | 76.4 |
| Douglas Oil Co. | Paramount | 46.5 | 8.5 | 10.5 |
| Edgington Oil Co. | Long Beach | 29.0 | 0 | 6.5 |
| Exxon Co., U.S.A. | Benicia | 88.0 | 73.8 | 20.0 |
| Fletcher Oil & Ref.Co. | Carson | 20.0 | 4.2 | 4.5 |
| Golden Bear Div,WITCO | Oildale | 10.5 | 0 | 2.4 |
| Gulf Oil Corp. | Santa Fe Springs | 51.5 | 28.5 | 11.7 |
| Kern County Refinery | Bakersfield | 15.9 | 2.6 | 3.6 |
| Lion Oil Co. | Avon | 126 | 74.3 | 28.5 |
| Lion Oil Co. | Bakersfield | 40.0 | 33.2 | 9.1 |
| Lunday-Thagard Oil Co. | South Gate | 5.0 | 0 | 1.1 |
| Mobil Oil Co. | Torrance | 123 | 88.4 | 50.8 |
| Mohawk Petroleum Corp. | Bakersfield | 22.1 | 2.2 | 5.0 |
| Newhall Refining Co. | Newhall | 7.5 | 0 | 1.7 |

KVB 26900-836

TABLE 3-14 (Continued)

| Company | Location | Crude Oil Operating Capacity, 10 ³ bbl/day | Gasoline Prod. Capacity, 10 ³ bbl/day | Benzene Emissions, 10 ³ lbs/yr |
|--------------------------|------------------|--|--|--|
| Pacific Refining Co. | Hercules | 53.3 | 17.7 | 12.0 |
| Powerine Oil Co. | Santa Fe Springs | 44.1 | 13.4 | 9.9 |
| Road Oil Sales | Bakersfield | 1.6 | 0 | 0.4 |
| San Joaquin Refining Co. | Oildale | 17.0 | 0 | 3.8 |
| Shell Oil Co. | Martinez | 87.4 | 43.3 | 19.7 |
| Shell Oil Co. | Wilmington | 90.0 | 45.0 | 20.4 |
| Sunland Refining | Bakersfield | 15.0 | 1.0 | 3.4 |
| Texaco, Inc. | Wilmington | 62.5 | 74.4 | 14.2 |
| USA Petrochem Corp. | Ventura | 15.0 | 5.0 | 3.4 |
| Union Oil Co. of Calif. | Arroyo Grande | 41.0 | 4.2 | 9.2 |
| Union Oil Co. of Calif. | Rodeo | 70.0 | 51.0 | 15.9 |
| Union Oil Co. of Calif. | Wilmington | 108 | 79.5 | 24.5 |
| West Coast Oil Co. | Bakersfield | 16.0 | 2.0 | 3.6 |
| TOTAL | | 1957.4 | 1019.0 | 387.8 |

KVB 26900-836



* Excludes ARCO & Chevron

Figure 3-9. Estimated benzene emissions associated with oil refinery operations (10^3 lbs/yr).

. Valves, Flange & Pump Inventory

- Reformer Unit
- Naptha Unit
- Crude Unit

. Other Fugitive Emissions

- Reformer Unit
- Naphtha Unit
- Crude Units
- Asphalt Plant
- Oil-Water Separators
- Cooling Towers

. Tank Storage & Transfer

- Crude Storage
- Gasoline Storage
- Other Petroleum Storage
- Gasoline Transfer
- Other Petroleum Transfer

Based on the mass of data obtained, an emission factor (24 hr average) of 162 lb/hr or 1.4×10^6 lb/yr was derived. Applying the benzene concentration factor used by PEDCO (0.6 wt %*), which is slightly higher than SRI's (0.5 wt %), benzene emission of 8,514 lbs/yr is obtained. The value shown in Table 3-14 for Douglas is 10,500 lbs/yr. Thus, the use of the PEDCO emission factor estimates, as amended here, appears to be justified.

3. Gasoline distribution and marketing--The process of moving gasoline and other petroleum products to user networks, including the extensive system of State service stations, occasions hydrocarbon and thus, benzene, emissions. Nationally, the benzene emissions from distributional operations (including marinas) is estimated at 3.8 million lbs annually. Losses at service stations and commercial fleet fueling facilities is estimated at an additional 14.6 million lbs. The much larger loss at service stations includes not only loading and refueling but tank vent losses and spillage.

* Not to be confused with value (0.06 wt %) given on Page 3-50, which is for oil field emissions.

Thus, an estimated 18.4×10^6 lbs benzene is dispersed to the atmosphere in what are largely urban areas. Based on 1977-1978 FY gasoline consumption in California (11.7 of the 100 billion gals consumed nationally), 2.2×10^6 lbs of this benzene was vented in the State. This, however, does not include losses occurring after vehicles are filled and back on the street.

The distribution of these vapor releases follow trucking lines, but are predominately patterned by the 16,135 (as of January 1979) service stations in the State. This pattern can be assumed to fit reasonably well with the human population distribution within the State. This is shown in Figure 1-2.

D. Automobile and Other Vehicular Traffic--

Estimates derived for benzene emissions from vehicular operations (Refs. 11 & 13) show this to be the greatest source of all those existing. The assumed average release rates for benzene varied considerably, SRI using a release rate about 10 times higher than the composited value adopted by PEDCO. The latter authors used test-stand measurements (Ref. 18) that included the specific determination of benzene in the exhaust stream. Thus, their estimates appear better supported and were therefore used.

Based on a 1976 automobile population, PEDCO calculated total benzene emissions from gasoline engine exhaust (373.5×10^6 lbs/yr) and car-tank evaporation (70.1×10^6 lbs/yr) at 443.6×10^6 lbs/yr. An additional 3.7×10^6 lbs were imputed to Diesel-engine traffic. This emission burden would be expected to decline over the past few years with the enrichment of the vehicular population with more catalyst-cars. Yet PEDCO did not take into account the present trend to use leaded gas in catalyst cars. This is now variously estimated by the media to have rendered from 15 to 35% of such rolling stock worse emitters than the precatalyst vehicles. In view of this, the estimated National vehicular benzene emission burden for 1976 was assumed to have remained unchanged for this study.

KVB 26900-836

Using California's fraction (11.7%) of the National gasoline consumption rate, gasoline and Diesel engine vehicular emissions of benzene were thus estimated at 52×10^6 lbs/yr or about 2.9 lbs/yr per vehicle.

Dissemination of this released benzene is a complex traffic function which involves standing (tank evaporation) as well as movement. For 1978, the DMV reports (Ref.23) 80.7×10^9 vehicle miles driven on the State highway system and 69.6×10^9 miles on road beds administered by local State jurisdictions. The traffic intensity for the State system (for 1977) is shown on Figure 1-2. This mapping includes only 54% of traffic flow and must be further increased by the other 46% of the traffic miles travelled on municipal and county road beds and parking areas. The city and county roads are of course predominately in urban locations.

E. Solvent Operations and Other Miscellaneous Sources of Benzene Emissions--

In a recent EPA report (Ref.24), the minor uses of benzene were considered. The estimated amounts of benzene consumed and released in the U.S. for such applications are shown in Table 3-15. The dramatic drop in consumption between 1976 and 1978 is attributed to the imposition of the OSHA Emergency Benzene Standard of May 1977. The trend is continuing towards elimination of benzene in those applications that are known to still involve its use.

Of the remaining minor users of benzene, only 2% of this consumption is reported to occur in the Pacific, Mountain, South Atlantic and New England States. This corresponds to 418,362 lbs annually consumed and an associable emission of benzene of 17,840 lbs/yr for this large area (Ref. 24).

Because of this comparatively small and widely distributed release, a survey was considered unwarranted. Nonetheless, one of the authors of the EPA report cited above was contacted. Mr. Marcus Sittenfield acknowledged that any benzene still used in California for solvent and other minor applications would have to be minuscule.

TABLE 3-15. CONSUMPTION VERSUS ENVIRONMENTAL LOSS
IN THE U.S. FOR BENZENE IN SOLVENT AND OTHER MINOR USES (1,000 GAL)
SOURCE: REF. 24

| Consumption Area | Estimated Consumption | | Estimated Environmental Loss | |
|---|-----------------------|-------|------------------------------|--------|
| | 1976 | 1978 | 1976 | 1978 |
| A. <u>Chemicals Production</u> | | | | |
| General Organic Synthesis | 2,962 | 2,213 | 691 | 309 |
| Pharmaceutical Synthesis | 650 | 220 | 200 | 66 |
| Small Volume Chemicals | | | | |
| Aluminum Alkyls | 312 | 312 | 312 | 312 |
| Alcohols | 465 | 100 | 225 | 55 |
| Bisphenol-A* | 0 | 0 | | |
| Ethyl Cellulose | 0 | 0 | | |
| B. <u>Formulated Industrial & Consumer Products</u> | | | | |
| 1. <u>Adhesives</u> | | | | |
| Rubber Based Adhesives | 0 | 0 | | |
| Tire Manufacture | 0 | 0 | | |
| Tire Retreading | 0 | 0 | | |
| Industrial Rubber Products | 0 | 0 | | |
| Tire Patch Repair Kits | 100 | 0 | 100 | 0 |
| 2. <u>Miscellaneous</u> | | | | |
| Automotive | 0 | 0 | | |
| Shoe | 0 | 0 | | |
| 3. <u>Paints and Allied Products</u> | | | | |
| Paints & Coating | 0 | 0 | | |
| Removers | 300 to 500 | 0 | 300 to 500 | 150 ** |
| TOTAL | 4,789 | 2,845 | 1,828 | 898 |
| | To 4,989 | | To 2,029 | |

*Use in 1976 was 2,990,000 gallons

**Estimated amount in product made prior to May 1977 and sold in 1978

3.3.8 Ambient Benzene Levels

Benzene has been measured in the ambient air of California, all in the southern portion of the State, on a number of studies (Refs. 25-29). The results obtained are shown in Table 3-16. After comparison with ambient data obtained for other volatile organics studied on this program, it will be seen that benzene is present at considerably higher levels. This is particularly true of the stations in the highly urbanized areas of the SCAB.

TABLE 3-16. BENZENE IN THE AMBIENT AIR OF SOUTHERN CALIFORNIA

| Location | Benzene Level, ppb | | Reference |
|------------------|--------------------|--------------|-----------|
| | Average | Maximum | |
| Azusa | 10 | 18 | 25 |
| Azusa | 3.3 | 11 | 29 |
| Banning | 2.3 | 11 | 25 |
| Camarillo | 0.6 | 1.9 | 29 |
| Death Valley | < 0.5 | < 0.5 | 29 |
| Downey | 2.6 | 4.8 | 29 |
| El Monte | 11 | 19 | 25 |
| Long Beach | 7.3 | 13 | 25 |
| Los Angeles | 10 | 21 | 25 |
| Los Angeles | 15 | 57 | 26 |
| Los Angeles | 40 | 60 | 27 |
| Palm Springs | 2.1 | 10 | 25 |
| Redlands | 3.5 | 12 | 25 |
| San Luis Obispo | < 0.5 | < 0.5 | 29 |
| San Nicholas IS. | < 0.5 | < 0.5 | 29 |
| Torrance | 4.1 | (One Sample) | 28 |
| Upland | 7.5 | 18 | 25 |

Source: Refs. 25-29.

3.4 CADMIUM

3.4.1 Summary of Utilization and Releases

In 1970, according to the Bureau of Mines, California ranked 18th of the 23 zinc-ore producing states in the United States. Lead-zinc, zinc-lead, and lead ores occur in the Eastern border of California, ranging south from Mono County through the Eureka and Death Valleys into northeast Mojave. Such ores are the major source of cadmium, most of which is recovered from dusts or precipitates collected at zinc production plants. Some cadmium is also recovered from lead smelters and waste recovery operations (e.g., involving spent nickel cadmium batteries).

Primary zinc smelting, which is not practiced within the State, accounts for the greatest airborne cadmium releases. Goldberg (Ref. 30) also noted that mining operations do not involve airborne cadmium releases. He did suspect secondary zinc and copper smelters of emitting cadmium fumes. Such operations are basically recycling processes, working scrap of the metal or alloy of interest. Because of the nature of the feedstock (clean scrap), cadmium emission factors (particularly in the case of copper smelters) should be low. Goldberg, however, rates the cadmium releases from secondary zinc and copper smelters at about one-tenth that of the primary zinc smelter.

Utilization of cadmium in the State is fairly prevalent and involves electroplating, cadmium-pigmented paint manufacture and use, cadmium stabilized plastics production, Ni-Cd battery assembly, and such miscellaneous uses as in alloying, nuclear engineering applications, and in various electronic devices (e.g., solar cells). Air release from all of these cadmium-consuming activities is considered to be negligible (Ref. 31 and 32).

Significant cadmium emission sources are actually not involved with the cadmium market. Refuse and sludge incineration, neither of which is practiced to any extent in California, is the second largest source of cadmium release according to Yost (Ref. 31). He estimates that primary smelters and refuse incinerators account for over 96% of the airborne cadmium released in the United States.

Thus, California's principal concern is with the minor (in the National context) remaining cadmium source-types, two of which are industrial in nature: steelmaking and coal-based processes. Another area is the emission of cadmium from automobiles. This particular emission effect results from the wear of automobile tires and the exhaust of lube oil residues. Cadmium occurs in the former as a rubber additive and in the latter as a natural constituent.

3.4.2 Steel Production*

The production of steel is associated with cadmium releases through two pathways: (1) coke production; and (2) use of scrap containing pieces that are cadmium-plated. Thus, in considering steel manufacture, cold rolling operations (U. S. Steel, Pittsburg) and certain types of specialty steel production that do not utilize scrap or coke are not of concern.

In California, only one integrated steel mill (ore to finished steel products) exists: the Kaiser Steel facility at Fontana. This plant is responsible for about two-thirds of the steel made in the State, producing just under two million tons last year. This facility produces its own coke on-site, operating 315 ovens in seven batteries.

Five other mills are operated in the State that input scrap and pig iron. These secondary steel mills are itemized as follows:

| Company | Location | Approximate Output (1978) 10 ³ Tons |
|-----------------|------------|--|
| Bethlehem Steel | Vernon | 400 |
| U. S. Steel | Torrance | 100 |
| Soule Steel | Carson | 110 |
| Ameron | Etiwanda | 300 |
| Judson Steel | Emeryville | 90 |

*Much of the information in this subsection was introduced in Section 3.1, q.v. for references, etc.

One mill, the Pacific States Steel Company's Union City Plant, was shut down last November. Reactivation is not anticipated.

3.4.3 Coal Consumption*

The three identified types of coal-consuming processes operating within the State are: (1) coke-forming; (2) Portland Cement production; and (3) steam generation.

A. Coke-forming--

The Kaiser Steel plant in Fontana is the only known coal-coking operation within the State. Annual coal consumption, based on coke feed rate, should be in excess of two million tons. The rated coal capacity is 2,336,000 tons. Because of the relatively low boiling point of cadmium, most of this metal in the feed coal is volatilized off during coking, such that the steel furnaces themselves do not emit much of the metal unless scrap containing cadmium plate is used. Steelmakers try to avoid the inclusion of cadmium plate in feed scrap since it deteriorates the quality of the melts produced.

B. Portland Cement Production--

Coal and coke are used to produce the hot gas feed for the production of lime in counter-current rotary kilns. A number of such facilities were identified, including the following larger ones:

- . Riverside Cement Company, Riverside
- . Monolith Portland Cement Company, Tehachapi
- . Southwestern Cement Company, Victorville
- . General Portland Cement Company, Mojave and Colton
- . Calaveras Cement Division, Flintkote, San Andreas
- . Kaiser Portland Cement Company, San Jose

Coal/coke consumption data were not available, although the use of 100,000 tpy total was specified in one case as being typical. In all of the works contacted, efficient air cleaning systems were described. These typically involved bag-houses for the last-stage of exhaust cleaning, although an electrostatic precipitator was employed in at least one kiln.

* See previous footnote

C. Steam Generation--

The only coal-fired steam generators operating within the State of California are in Trona. These two boilers are rated at 600,000 lbs/hr steam production each and are at the Kerr-McGee Chemical Company facility. Feed is New Mexican coal and petroleum-derived coke produced in California. The generators are equipped with an electrostatic precipitator (98.5% efficient). The cleaned E.P. output, however, is sent through liquid scrubbers to extract CO₂ which is used to carbonate brine and thus promote yields of the end product, soda ash. The CO₂ removal also results in an SO_x removal that is 98% efficient.

3.4.4 Automobile Emissions

According to the Department of Motor Vehicles, the 1978 population of vehicles utilizing the roads in California was:

| <u>Vehicle Type</u> | <u>Quantity</u> |
|---------------------|------------------|
| Passenger Cars | 12,219,230 |
| Trucks | 3,012,150 |
| Motorcycles | 672,162 |
| Trailers | <u>2,080,746</u> |
| | 17,984,288 |

This rolling stock consumed over 11 billion gallons of gasoline in 1978 and in the neighborhood of 400 million quarts of lube oil. The estimated tire rubber abraded away by this California vehicle inventory is 54,000 tons per year (based on Ref. 33). While gasoline contains only traces of cadmium, it is present in various natural amounts in petroleum-derived lube oils. Cadmium soaps (usually stearates) are often used in tire rubber recipes. Cadmium release mechanism has been speculated (Ref. 33). Lube oil cadmium emission probably occurs in the combustion chamber of the engine. The formed oxidation products of organic cadmium then exit through the exhaust system. Tire rubber attrition is probably a more complicated process but apparently involves the generation of fine particulate matter and some vapor. Williams and Cadle (Ref. 33) found that between 1 to 20% of the wear-loss dispersed in the atmosphere, while the balance largely settled near the roadbed. Harrison and Winchester (Ref. 34) implicate the automobile (including its gasoline combustion products) for some contribution to the airborne cadmium found in urban areas.

3.4.5 Secondary Zinc Smelters

Aside from zinc slab melters/casters, which are not considered to be cadmium emitters (Ref. 26), only three secondary zinc smelters operate in the State. These were identified by the Bureau of Mines as:

- . Aetna Metals Company, City of Industry
- . Pacific Smelting & Refining Company, Torrance
- . ASARCO* Federated Metals Division, San Francisco

Such facilities rework zinc scrap in sweat furnaces to produce ingot metal (sows). After chemical analysis, the sows are remelted and realloyed to specifications. Unlike primary zinc smelters which work ore, no cadmium dust is produced and collected. Because of the prior removal of cadmium from marketed zinc, rework of scrap in secondary zinc smelters is not likely to occasion air releases of cadmium that approach those produced in zinc ore roasting, sintering and smelting (Ref. 31).

3.4.6 Secondary Copper and Copper Alloy Smelters

There are no primary copper (ore) smelters located in the State of California, according to the Bureau of Mines. Facilities that melt scrap or prepare alloys from scrap and/or pure ingot metals are few in number. The possibility of cadmium releases from these plants would have to be considered on a case by case basis.

3.4.7 Cadmium Emission Factors

A. Steel Production--

1. Integrated steel plant--The cadmium emission factor for the Kaiser integrated steel mill at Fontana is estimated at 0.2 g/sec or 7.0 metric tons cadmium/yr. This is derived from Yost's estimate (Ref. 35) for all steel mills of 266 metric tons cadmium/yr. Kaiser's contribution was factored from this on the

* American Smelting and Refining Co.

basis of rated coal capacity (2.336×10^6 tons/yr vs. 97.298×10^6 tons/yr for all U.S. Steel plants). It should be recognized that variations of considerable degree exist in the coal ash and iron ore cadmium content, the manufacturing processes and feed compositions employed, and in the type of APC equipment typically in place throughout our Nation's steel mills. These factors will significantly influence cadmium emissions.

The cadmium release estimated for Kaiser, Fontana, represents the potentially highest rate identified for that metal on this study. It should be noted also that the atmospheric cadmium concentrations for the nearby City of San Bernardino were the highest of any recorded in California by the National Air Sampling Network (NASN). The data cited are for 1973 in which year average cadmium levels of $0.013 \mu\text{g}/\text{m}^3$ were measured. This is over twice the average ($0.006 \mu\text{g}/\text{m}^3$) for the 15 other California cities monitored.

2. Secondary steel mills--Data on the release of cadmium from mills working scrap with pig iron are limited. Yost's (Ref. 35) values estimated for controlled and uncontrolled furnaces are 0.05 and 2.62 g, respectively, per ton of steel produced. This assumes an APC efficiency of 98%. The five mills in California are all equipped with APC systems, bag houses in most cases (U.S. Steel, Torrance, employs an E.P.). It can be assumed that cleaning efficiency is 98% or better. Thus, using Yost's release factors for controlled mills and factoring in production data, the following releases (Table 3-17) are estimated:

TABLE 3-17. ESTIMATED CADMIUM RELEASE RATES
FOR SECONDARY STEEL MILLS IN CALIFORNIA

| Company/Location | Estimated Cadmium Release Rate, lbs/yr |
|--------------------------|---|
| Bethlehem Steel, Vernon | 45 |
| U.S. Steel, Torrance | 11 |
| Soule Steel, Carson | 12 |
| Ameron, Etiwanda | 33 |
| Judson Steel, Emeryville | 10 |

KVB 26900-836

3. Geographic distribution of California steel mills and associated cadmium release estimates--Figure 3-10 sites the steel mills in California and the estimated emission rates calculated for each.

B. Coal Consumption--

1. Coke forming--See integrated steel plant.
2. Portland cement production--Cadmium (and arsenic) release in calcining is not only controlled by the APC equipment installed but by the nature of the process itself. Countercurrent flow of the dehydrating cement powder and coal/coke combustion gases promotes the capture of cadmium-containing particulates and condensation of cadmium vapor on elutriated fines in the colder (cement input) sections of the kiln.

For the above reasons, an insignificant emission of cadmium from cement kilns is probably the case.

3. Steam generation--The two Kerr-McGee coal/coke-fired boilers at Trona are rated at 98% efficient for SO_2 removal. This stage, which is actually a critical step in the soda ash production scheme and is not intended for APC per se, follows an E.P. rated at 98.5% efficiency. As in the case of arsenic, it is therefore believed that cadmium release is insignificant (see Section 3.1).

C. Automobile Emissions--

Subramani (Ref. 31) estimates that the loss of particulate tire matter from the average automobile is 0.918 lb/1000 miles of travel. Assuming a conservative mileage of 10 miles/gal, tire-wear loss would be 54,000 tons in 1978, based on the 11.8×10^9 gals consumed in the State from July 1977 to June 1978. Goeller et al (Ref. 37) estimated the national emissions of cadmium from tire-wear and lube oil to be 12.8×10^3 lbs/yr. Assuming (conservatively) that California contributed 10% of this, and correcting for the ensuing increase in gasoline consumption (13.5%), roadbed cadmium emissions would now be about 1.5×10^3 lbs/yr.

KVB 26900-836

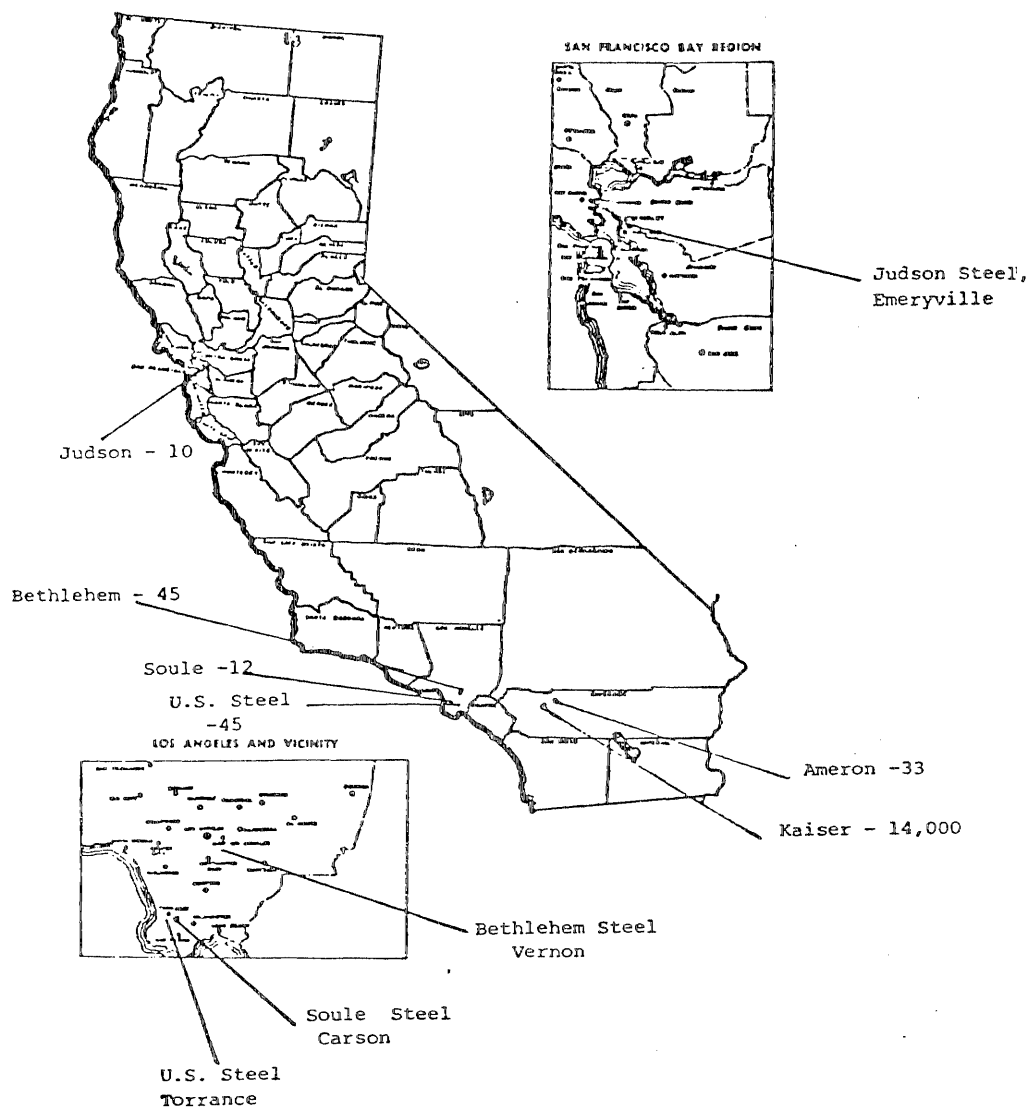


Figure 3-10. Estimated cadmium emissions (lbs/yr) from steel production plants.

KVB 26900-836

Distribution of this cadmium tends to concentrate about the roadbed itself. Somewhere between 80 to 99% of it is particulate and this fraction probably incorporates all or most of the released cadmium (Ref. 33).

D. Secondary Smelters--

1. Secondary Smelters--Unlike primary zinc smelters and secondary copper smelters, the secondary zinc smelter has apparently not been characterized for cadmium emissions. Because of the primary process from which it was formed, zinc scrap, the feed for the secondary smelter should be low in cadmium content. Furthermore, the nature of the primary process is far more conducive to cadmium release than is the secondary process.

Thus, lacking any survey data or related estimates, the cadmium emission factor* for the scrap steel/pig iron mill was assumed to apply. This was arbitrarily increased by a factor of twenty and was multiplied by production figures. The latter were rough approximations furnished by a technical manager of one of the smelters. The resulting releases computed, which proved quite small, are shown in Table 3-18.

TABLE 3-18. ESTIMATED CADMIUM EMISSION RATES FOR
SECONDARY ZINC SMELTERS

| Mill/Location | Estimated Cadmium Emission Rate, Lbs/yr |
|--|--|
| Aetna Metals, City of Industry | 200 |
| Pacific Smelting & Refining Co., Torrance | 300 |
| ASARCO Federated Metals Division, San Francisco | 60 |

2. Secondary copper smelters--The Bureau of Mines identifies four secondary smelters that process scrap copper and copper alloys in the State. They are:

* 0.05 lb per ton of metal produced (See Sec. 3.4.7.A.2)

- . Federated Metals Division, ASARCO, Inc., San Francisco
- . H. Kramer & Company, El Segundo
- . Pacific Trading Corporation, Carson
- . Weiner Metals Division, Weiner Steel Corporation, Paramount

Factors have not been derived for cadmium emissions, although Goldberg (Ref. 30) estimates that, nationally, such installations release as much as 70 tons per year of cadmium. This would suggest fairly large releases for the four smelters itemized. All, however, operate APC systems and it is doubtful that releases exceeding 10% of what would be estimated from Goldberg's data for secondary smelters would be likely. This should be verified, of course, by actual testing on-site. For the purposes of this report, it was assumed that the output of California's secondary copper metal/alloy smelters would be 10% of the National product, which is undoubtedly an overcredit. Then, using Goldberg's factor and applying a 90% reduction for APC benefits, an emission of 1,400 lbs cadmium per year was estimated. Since the specific production figures for the four smelters could not be obtained, the release was equally divided. From the comments offered by their representatives, it is believed that ASARCO and Kramer merit larger fractions.

E. Geographic distribution of cadmium emissions from nonferrous secondary smelters--The potential release points of cadmium from secondary zinc and copper metal/alloy smelters is shown on Figure 3-11.

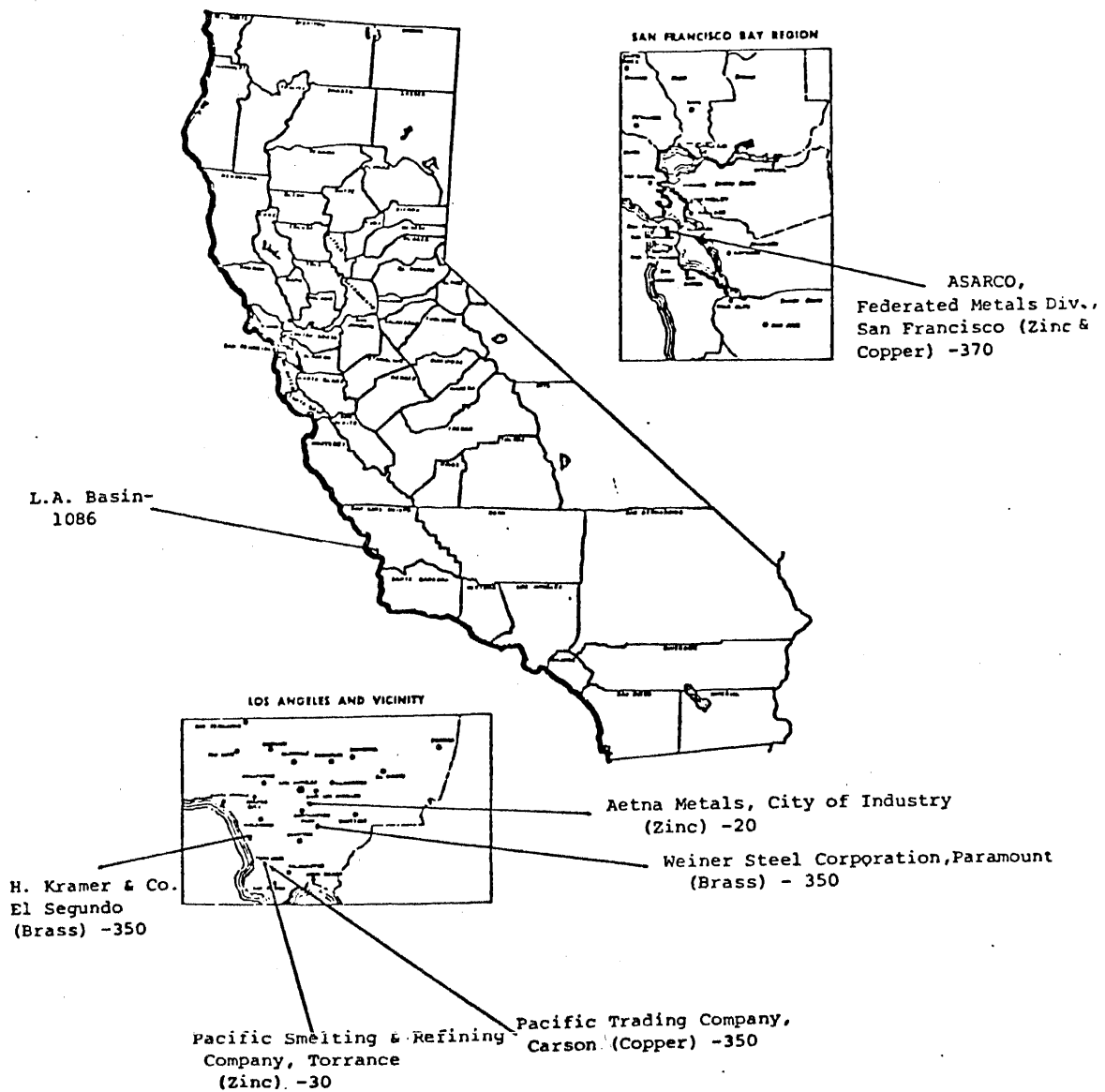


Figure 3-11. Estimated cadmium emissions (lbs/yr) for secondary non-ferrous smelters.

3.5 CARBON TETRACHLORIDE

3.5.1 Summary of Production and Usage

A. Production--

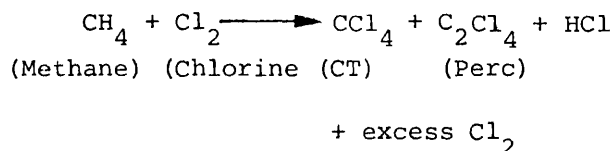
The role of carbon tetrachloride (CT) as an industrial chemical has been diminishing. Following the announcement of its suspected carcinogenicity in 1974, use of the material in solvent and related applications particularly declined. The surviving and principal use of CT is for conversion to trichlorofluoromethane and dichlorodifluoromethane (fluorocarbon -11 and -12, respectively). These materials have been used primarily as aerosol propellants, which usage now has given way to LPG mixtures that are deemed environmentally more acceptable.

National CT production was 770 million lbs in 1978, a drop of 34% from the 1974 peak. Annual CT production is expected to drop further to 500 million lbs by 1982, according to the Chemical Marketing Reporter (April 10, 1978). DuPont has closed its Freon plant in East Chicago; Union Carbide stopped all fluorocarbon production by shutting down its plant at Institute, West Virginia; Stauffer ceased CT production at its Niagara Falls facility; and FMC expects to discontinue CT manufacture at its Charleston, West Virginia plant by the end of this year.

The only CT made in California is by Dow Chemical Co. at its Pittsburg plant on the San Joaquin River. Capacity is 80 million lbs/yr. Production varies considerably, however, since Dow depends on sales to the nearby Du Pont freon plant at Antioch, which also receives CT from du Pont, Corpus Christie, TX. Fluctuations in CT demand are compensated for by Dow by varying the output of perchloroethylene, which is a coproduct in the synthesis, the comparative yield of which can be varied by altering the feed stock composition. All of Dow's CT output is used as intermediate in fluorocarbon syntheses. The above information was furnished by Dow's Mr. Bryant Fischback who was a member of the Panel of Experts convened for this program by SAI.

According to Dow's Daniel (Ref. 38), CT and perc are produced in equimolar amounts by the chlorination of methane at 550 to 650 °C without need

of a catalyst:



Ethylene can be substituted for methane or combined with it to increase the yield of perc with respect to CT or, by eliminating methane produce no CT at all.

The process flow described by DeShon of Dow (Ref. 39) is shown in Figure 3-12. The reaction is exothermic and so rapid that undesired products will form unless heat is absorbed in the reactors. This is done by feeding back through the evaporator cooler vapors of the halocarbon products along with recycled (excess) chlorine and unreacted hydrocarbon feed.

Hot gases leaving the reactor are similarly cooled by contacting them with liquid product in the quench column. The condensate from the quench tower is sent on to the fractionation column while the vapors are passed through the condenser system to furnish the recycle liquid for the quench tower and the evaporator supplying cooling vapor to the reactor.

Distillation cuts of CT and perc are further purified to remove traces of chlorine and acid. The products are then held in check tanks until passed by QC for removal to regular storage.

Being an entirely closed system, volatile losses are likely to occur at pump seals, valves, flanges, and the vents of the check tanks and distillation column. External to the process, additional losses can be expected at the storage tank and in handling the materials for shipment.

B. Usage--

1. Fluorocarbon synthesis--The du Pont Antioch Works was consulted as to CT usage and emissions in the production of Freons 11 and 12. They advised by letter that the CT consumption at Antioch was 50.2 million lbs during 1978. This value proved to be a fair validation of the KVB estimate of 60 million lb which was developed from an assumptive scenario for use had not du Pont been so cooperative.

KVB 26900-836

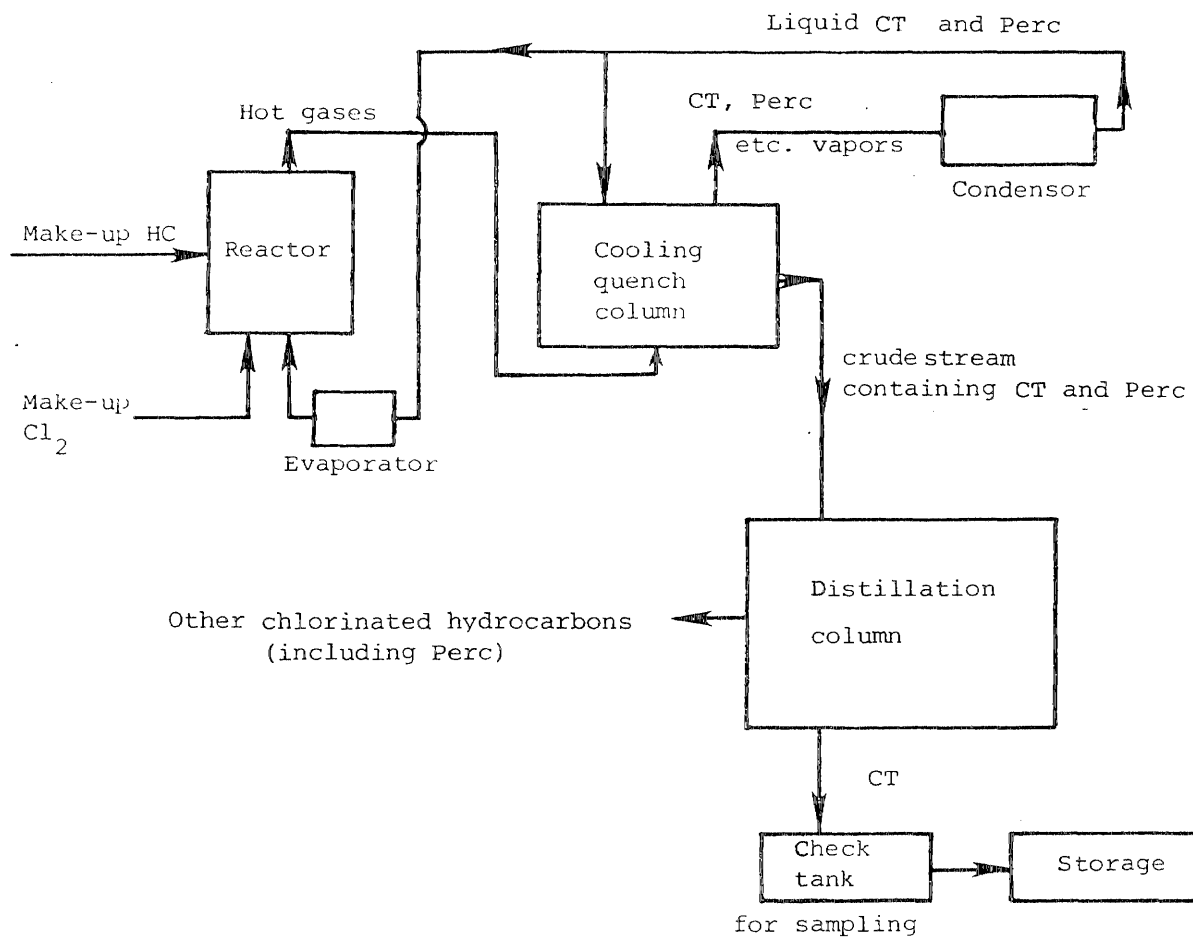


Figure 3-12. Process flow diagram for the production of carbon tetrachloride (and perchloroethylene) (Source: Ref. 39)

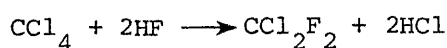
Allied Chemical Corp. as late as 1977 produced Genetron 11 and 12* from CT at its El Segundo Plant. Production was then shifted over to Genetron 22, using chloroform as the hydrofluorination intermediate. Then, in March, 1979, Allied returned to G-11 and -12 production, in reaction to market fluctuations, according to a company spokesman.

CT consumption at the Allied El Segundo plant in 1977 was reported to KVB by that company as 26.6 million lbs/yr. Because CT consumption in 1978 (6.8 million lbs) was interrupted with the substitution of chloroform and 1979 CT input data would be for too short a period, the current rate was assumed to be the same as for 1977.

The generally used process (Ref. 40) for synthesizing F-11 and F-12 fluorocarbons is shown in Figure 3-13. The reaction involves the anhydrous reaction of CT with hydrogen fluoride (HF) in the presence of a catalyst, typically antimony pentachloride (SbCl_5):



(CT) (F-11)



(F-12)

If chloroform is substituted for CT, as was done for a time at Allied Chemical, El Segundo, F-22 results.



(Chloroform) (F-22)

In the process, CT and HF are bubbled through molten SbCl_5 (m.p.t. = 2.9 °C). Because the reaction is weakly endothermic the reactor is steam jacketed and maintained at between 66 and 94 °C. The product vapor is passed through a fractionation tower, the CT condensate is recycled to the reactor, while the fluorocarbon and HF vapors are passed through a water scrubber to remove most of the HF. The last traces of HF and any chlorine produced in the synthesis are removed in a caustic scrubbing tower. The wet fluorocarbon vapor is then passed through a concentrated sulfuric acid scrubber to dry the gas.

* Genetron and freon (G & F) are trade names denoting the same chemicals by numerical suffixes.

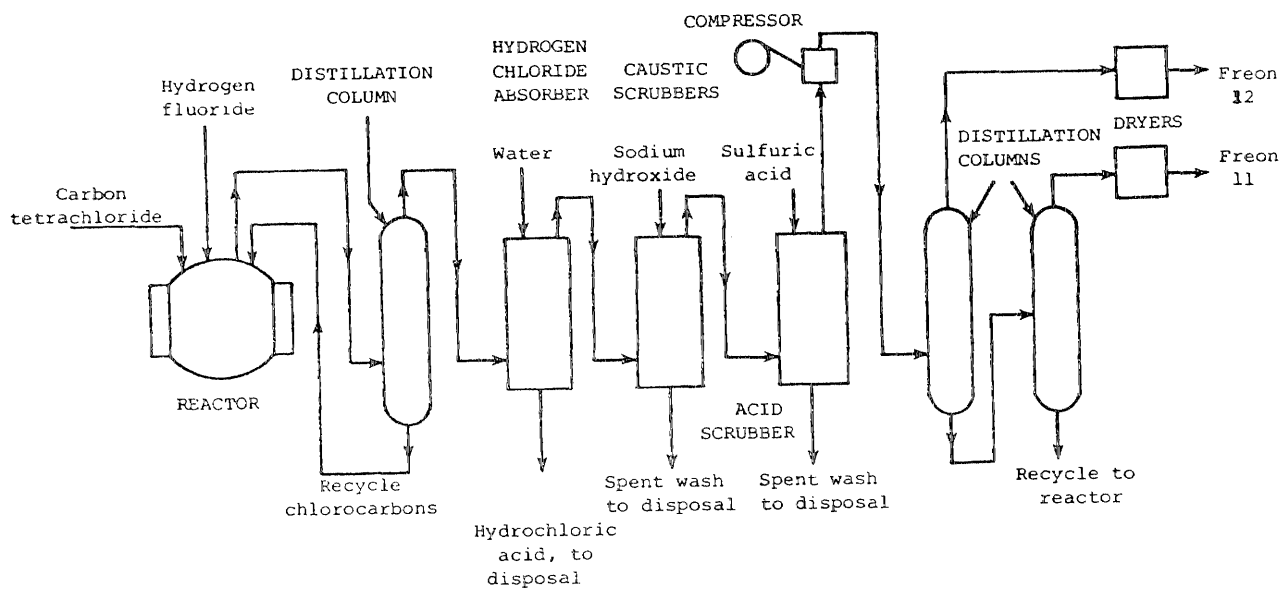


Figure 3-13. Flow diagram of process for conversion of carbon tetrachloride to fluorocarbons (Source: Ref. 40)

The mixture of F-11 and F-12 is then compressed and passed through two condensation stages. The first removes liquid F-11, passing off F-12 vapor for final drying and condensation. The F-11 is vaporized in the last distillation stage, any condensate (predominately CT) being recycled back to the reactor.

Because the process largely converts a bulk of the feed CT in the first stage of this closed process, release of CT from the system will be restricted to the input piping. External to the process, storage and handling of CT would represent the most likely points for atmospheric release of CT.

2. Other uses of CT--In other uses of CT, agricultural fumigation operations consumed 6,802 lbs in 1977 according to the Pesticide Usage Reports. Most (68%) of that amount was reported by the Food and Agriculture Division as controlled by "other agencies". These were primarily in San Francisco and Alameda Counties. This indicates probable use in grain ships and elevators, the principal use-points for CT in agricultural operations. In any case, the total amount was quite small and does not warrant further attention.

Other CT uses in California could not be identified. With one exception, none of the manufacturers of CT acknowledged sales of the chemical in California for other than use as a flurocarbon synthetic-intermediate. The one exception was Vulcan Materials Co. who declined to divulge any CT marketing information that "would be available to public scrutiny". This also applied to the three other halocarbons (chloroform, ethylene dichloride, and perchloroethylene) Vulcan manufactures that were also studied on this program.

C. Ambient CT Levels--

The many atmospheric values obtained for this pollutant (predominately in the Los Angeles Basin) show rather low levels. Pellizzari (Ref. 28) found a "hot spot" concentration of $38 \mu\text{g}/\text{m}^3$ CT at ground level in the city of Torrance. The sampling point was in the vicinity of the Montrose Chemical Co. pesticide plant and within a two mile radius of the Mobil Oil Refinery, a PPG Industries paint factory, and a Dow Chemical Co. plant. The CT level at this "hot spot" can be compared with the National Academy of Sciences value ($0.82 \mu\text{g}/\text{m}^3$) for world background, which was derived from tropospheric CT data reported by various scientists (Ref. 34). The Torrance level can also be compared with the OSHA MAC ($65 \text{ mg}/\text{m}^3$, 8 hr twa), three orders of magnitude higher.

3.5.2 Emission Factors

A. Production Losses--

The amount of carbon tetrachloride lost to the atmosphere during synthesis is estimated at 1.6 wt % by the National Academy of Sciences (Ref. 41). Thus, using that fractional loss and assuming production at 25% of capacity, the Dow plant could be responsible for a release of 0.32×10^6 lbs/yr (4.75 g/sec). These losses would occur during production itself, storage of the output, and shipping of material.

This same plant also manufactures perchloroethylene (see Section 3.10). Production of this solvent (22×10^6 lbs/yr) is estimated to be about the same as has been assumed here for CT (20×10^6 lbs/yr). Using the release factor (Ref. 67) estimated by a different source, the total plant emissions of perchloroethylene turn out to be about one seventh those of CT. The latter has a considerably lower boiling point (75 °C vs. 121 °C) than perchloroethylene, but it is doubtful that this property would account for such a large difference in the losses of the two compounds. This matter will best be clarified through source testing.

Because Dow did not wish to comment on perchloroethylene release estimates (see Section 3.10.5.A) made by others, they were not consulted in the CT emission matter.

B. Conversion Losses--

Carbon tetrachloride loss during conversion to fluorocarbons is estimated at 3 wt % by A. D. Little, Inc. (Ref. 42). Monsanto put the factor at 1.7 wt % (Ref. 41). On the basis of other estimates (Ref. 44-46), the NAS estimated (Ref. 41) atmospheric losses at 1.0 wt % of CT input. This would impute an annual CT release at du Pont, Antioch, of 502,000 lbs/yr and at Allied, El Segundo, of 265,000 lbs/yr, based on the CT consumption data cited earlier. Du Pont stated that their CT atmospheric releases were in the range of 20,000 to 40,000 lbs/yr, arising almost entirely from CT off-loading and storage (20,000 to 30,000 lbs/yr) with smaller losses (~3200 lbs/yr) occurring at the reactor vent, a device that is utilized only about six times

a year to accommodate maintenance. Allied stated that no chloroform could be detected at the Genetron tails tower (the principal process emission source) when working that halocarbon. They further stated that the same result would occur when CT was the processed chemical. KVB's sampling results (Ref. 22) at the Genetron plant in 1977 confirm this assessment. In terms of storage and offloading, however, the more diffused nature of any emissions occurring at these points may have escaped detection. The instruments used were not highly sensitive in CT measurement. Based on du Pont's emission estimate and factoring for consumption rate, the CT release at El Segundo would be less than 7,000 lbs/yr. This is equivalent to a release of 0.1 g/sec.

Although KVB is inclined to agree with du Pont that the NAS emission factor is far too high, a range (with the NAS and du Pont estimates as the extremes) is tabulated as follows:

ESTIMATED CT LOSSES FROM TWO FLUOROCABRON PLANTS

| Plant | Annual CT Consumption, 10 ⁶ lbs | Estimated Range of CT Emissions, lbs/yr |
|--------------------|--|---|
| Du Pont, Antioch | 50.2 | 20,000-502,000 |
| Allied, El Segundo | 26.5 | 10,000-265,000 |

C. Natural CT Formation--

Trace amounts of CT are known to form in water bodies where organic solutes are broken down to halomethanes. As explained in Reference 47, these progressively add chlorine, producing CT, chloroform and other halo-carbon species.

D. Geographic Distribution--

Because only three point sources are identified, two of which are in adjacent towns, a map is not shown here. The demographic CT impact is, however, mapped in Section 4.0.

KVB 26900-836

3.6 CHLOROFORM

3.6.1 Summary of Distribution and Usage

As with CT, the usage of chloroform has become considerably restricted because of health considerations, including carcinogenicity factors. The single major end-use of chloroform is in the production of chlorodifluoromethane (Fluorocarbon-22). This refrigerant/propellant has recently absorbed some of the diminishing markets for F-11 and F-12, such that chloroform production has increased in the past few years. According to the Chemical Marketing Reporter (September 25, 1978), the six month periods ending June 1977 and 1978 saw National chloroform production at 130 and 172 million lbs, respectively. The same report shows F-22 production during the latter six month period at 99 million lbs. This would require 80% of the chloroform produced during that same period, assuming stoichiometry and no process losses.

No chloroform is produced in the State but one F-22 plant was operated at El Segundo. This is owned by Allied Chemical Corp. and was on F-22 stream a relatively short time. The plant formerly produced F-11 and F-12. As of March, 1979, Allied switched back to F-11 and F-12 production and now no longer consumes chloroform (see Section 3.5.1. B-1).

Solvent and other minor uses of chloroform in the State were quite limited. According to CALOSHA officers, the only known users of chloroform in the State are laboratories. The Rancho Los Amigos, for example, uses hundreds of gallons each year in testing inmate urine specimens for narcotics. Significant industrial uses, other than at El Segundo, are virtually unknown. The principal minor use of chloroform is in pharmaceuticals synthesis, little of which is done in this State according to trade contacts.

Chloroform is produced in natural and in sanitary water systems where the effect is certainly not sought. Chlorine in drinking water, for example, can produce up to 90% conversions of trace carboxylic acids to chloroform (Ref. 47). Sources of this type, the oceans, and other natural processes account for a world chloroform background (tropospheric) of about 32 ppt according to

the NAS (Ref. 41). This same source estimates a typical urban level of chloroform at about ten times that concentration. The CALOSHA MAC (8 hr twa) is 25 ppb, which is about 75,000 higher than the urban average.

Further consideration of this compound is felt not to be warranted for the following reasons:

- . No "hot spots" could be associated with its very small usage.
- . Usage is not likely to increase.
- . Present ambient levels of chloroform are relatively low.

3.7 ETHYLENE DIBROMIDE

3.7.1 Production-Usage Summary

Ethylene dibromide (EDB) is produced by some 23 firms, although some 59 firms have registered as manufacturers of the material in the U.S. None are located in California. Most EDB production goes into leaded gasoline. In this role, its use is declining in proportion to the diminishing use of tetraethyllead. This market nonetheless constitutes about 80% of the national demand for EDB.

In agriculture, EDB is used for the control of fruit fly larvae, wire worms, and nematodes. The first mentioned application comprises the largest pesticide use of EDB but is only practiced in Florida and Texas. The principal agricultural use of EDB in California has been on fields on which beans, watermelon and carrots have been grown. Because of its demonstrated toxicity, EDB is not allowed in home-used pesticide formulations.

Other markets for EDB include its use as an organic synthetic intermediate and as a specialty solvent for certain resins, gums and waxes. No significant consumption of EDB in California for either of these applications could be identified on this study.

3.7.2 EDB Use in Gasoline

A. Gasoline Refineries--

Antiknock solutions that are added to gasoline typically contain tetraethyllead (TEL), EDB, and ethylene dichloride (EDC), the last item being subject to separate consideration in this report. The weight ratios reported to KVB by the Ethyl Corporation for these mixtures are 1.000:0.294:0.304, respectively. On an elemental basis, this is equivalent to an atomratio of 1:1:2 for Pb:BR:Cl. The function of the two haloethanes is to provide available halogen with which combustion-formed lead oxide

KVB 26900-836

may react and thus produce volatile lead halides that will then pass through the exhaust system. In preventing lead build-up in the engine, the additives are thus called lead scavengers.

The consumption of EDB in gasoline production is fixed to the amount of TEL that is incorporated. Thus EDB purchases by refiners have dropped as the permissible levels of TEL have been set lower by regulation. In the summer of 1978, the following average TEL contents were reported by DOE (Ref.48) for gasolines sampled at refineries and service stations.

| | <u>TEL Content (As Pb)</u> <u>in Gasoline, g/gal</u> | |
|---------------------|---|----------------|
| | <u>Regular</u> | <u>Premium</u> |
| Northern California | 1.13 | 1.63 |
| Southern California | 1.10 | 2.03 |

Present usage, according to the CARB, is 1.00 g Pb/gal. This is based, however, on total gasoline production. If the unleaded gasoline volume (about 34% of the total according to the Franchise Tax Board) is omitted, the average lead content would be 1.52 g/gal for the leaded types of gasoline.

According to the California Energy Commission, total gasoline production in California for July 77 - June 78 was 12.7×10^9 gals. This includes imports and exports, which amounted to a net export of about 8%. This called for the use of 12.7×10^9 g of Pb in that portion of that gallonage that was leaded. This is equivalent to 19.8×10^9 g as TEL or 5.8×10^9 g EDB or an annual demand of 12.8×10^6 lbs of EDB for gasoline doping in the state.

Distribution of this demand is among some 26 refineries in the state. A listing of these facilities and their capacities are shown in Table 3-19. The total capacity reflects an annual gasoline output of 15.6×10^9 gals. Since the annual (July 77 - 78) recorded production was 12.7×10^9 gals, operations were 81% of capacity.

The relative amount of leaded gasoline that is produced at each of the refineries listed in Table 3-19 of course varies. Most refineries produce

TABLE 3-19 GASOLINE REFINERIES OPERATING
IN THE STATE OF CALIFORNIA

| Company | Location | Crude Oil Operating Capacity, 10 ³ bbl/day | Gasoline Prod. Capacity, 10 ³ bbl/day |
|-------------------------|------------------|--|--|
| ARCO | Carson | 185 | 87.4 |
| Beacon Oil Co. | Hanford | 12.4 | 2.6 |
| Champlin Petroleum Co. | Wilmington | 30.7 | 3.0 |
| Chevron USA | Bakersfield | 26.0 | 2.6 |
| Chevron USA | El Segundo | 230 | 125.4 |
| Chevron USA | Richmond | 338 | 145.8 |
| Douglas Oil Co. | Paramount | 46.5 | 8.5 |
| Exxon Co., USA | Benicia | 88.0 | 73.8 |
| Fletcher Oil & Ref. Co. | Carson | 20.0 | 4.2 |
| Gulf Oil Corporation | Santa Fe Springs | 51.5 | 28.5 |
| Kern County Refinery | Bakersfield | 15.9 | 2.6 |
| Lion Oil Co. | Avon | 126 | 74.3 |
| Lion Oil Co. | Bakersfield | 40.0 | 33.2 |
| Mobile Oil Co. | Torrance | 123 | 88.4 |
| Mohawk Petroleum Corp. | Bakersfield | 22.1 | 2.2 |
| Pacific Refining Co. | Hercules | 53.3 | 17.7 |
| Powerine Oil Co. | Santa Fe Springs | 44.1 | 13.4 |
| Shell Oil Co. | Martinez | 87.4 | 43.3 |
| Shell Oil Co. | Wilmington | 90.0 | 45.0 |
| Sunland Refining | Bakersfield | 15.0 | 1.0 |
| Texaco, Inc. | Wilmington | 62.5 | 74.4 |
| USA Petrochem Corp. | Ventura | 15.0 | 5.0 |
| Union Oil Co. of Calif. | Arroyo Grande | 41.0 | 4.2 |
| Union Oil Co. of Calif. | Rodeo | 70.0 | 51.0 |
| Union Oil Co. of Calif. | Wilmington | 108 | 79.5 |
| West Coast Oil Co. | Bakersfield | 16.0 | 2.0 |
| TOTAL | | 1957.4 | 1019.0 |

Source: Oil & Gas Journal

KVB 26900-836

two grades of leaded gasoline, the premium grade typically containing higher concentrations of TEL, EDB, and EDC than the regular grade. In contrast Union Oil offers only one grade, their premium. Not all of the refineries operating within the state produce unleaded gasoline. Thus the amount of TEL added per output gallon of gasoline varies somewhat from refinery to refinery and within the same refinery as demand and reserves fluctuate.

Determining by canvass the actual amount of TEL and, thus, EDB and EDC blended into production by each refinery was not practical. The adopted simplification was to apply the statewide TEL doping level (1.00 g Pb/gal) for all gasoline (including lead-free) to each of the individual producers. In terms of the end consideration (EDB emissions in populated areas), this approach does not pose serious inaccuracies. Most of the California refineries are grouped in three discrete geographical areas: (1) the Los Angeles basin; (2) Carquinez Straights; and (3) the Bakersfield area. With the exception of the Chevron-Richmond refinery, which is only about 12 miles from the Carquinez refineries centerpoint, all of the other refineries in the state account for less than 2% of the total gasoline production in the state. Because of this grouping, any variations in TEL usage-ratios from plant to plant within each area should only be discernible in the associated emissions on a very localized basis.

Variations in TEL doping levels between the three State refining areas was also assumed to be minor. This is supported by the DOE lead data tabulated earlier.

Observing these assumptions, Table 3-20 lists the State refineries in the geographic grouping cited. The estimated leaded gasoline production is derived from total production data that was shown earlier in Table 3-19, the assumption that the average refinery production was 81% of capacity, and that 34% of the resultant gallonage is unleaded. The TEL doping level is assumed to be 1.52 g Pb/gal of leaded gasoline produced, and that 0.445 g of EDB is added to the composite gallon of leaded gasoline.

KVB 26900-836

TABLE 3-20. ESTIMATED LEADED GASOLINE
PRODUCTION AND ASSOCIATED EDB USAGE
IN CALIFORNIA DURING 1977/1978

| AREA | Number of Refineries | Estimated Leaded Gasoline Production, 10 ⁶ gal/day | Estimated EDB Usage, 10 ⁶ lbs/yr |
|---------------------|----------------------------|---|---|
| Los Angeles Basin | 10 | 10.7 | 3.8 |
| Carquines Straights | 5 | 5.8 | 2.1 |
| Bakersfield Area | 5 | 0.93 | 0.3 |
| Other* | <u>4</u> | <u>3.3</u> | <u>1.2</u> |
| Total | 24 | 20.7 | 7.4 |

* 92.4% of the production for this category is located at the Chevron-Richmond Refinery.

TABLE 3-21. EDB USAGE IN CALIFORNIA
FOR VARIOUS TYPES OF PEST CONTROL DURING 1977

Source: Pesticide Usage Report 1977

| TYPE APPLICATION | EDB APPLIED, LBS | ACRES TREATED |
|---------------------------|------------------|---------------|
| <u>Crop Applications</u> | | |
| Barley | 91 | 40 |
| Beans | 170,460 | 8,746 |
| Broccoli | 144 | 4 |
| Carrots | 78,603 | 2,032 |
| Cauliflower | 114 | 2 |
| Lettuce | 10,577 | 135 |
| Melons | 1,037 | 30 |
| Parsnips | 3,408 | 100 |
| Bell Peppers | 11,357 | 502 |
| Potatoes | 13,873 | 230 |
| Tomatoes | 133,125 | 3,015 |
| Watermelons | 55,676 | 465 |
| <u>Land Applications</u> | | |
| Fallow Land | 8,640 | 48 |
| Open Land | 4,320 | 200 |
| Non-Agricultural Areas | 6,920 | 267 |
| Soil Fumigation | 13,069 | 314 |
| <u>Other Applications</u> | | |
| Structural Control | 1,158 | |
| Residential Pest Control | 4.6 | |
| Other Agencies* | 2,801 | |
| TOTAL | 515,378 | |

*Material use controlled by other agencies, exact use not known.

B. Gasoline Marketing and Combustion

Although the largest potential point-source releases of EDB would be expected to be the refinery (during mixing), the marketing paths for gasoline and the roadbeds over which gasoline is carried and its combustion by the vehicular traffic must also be considered. Gasoline vapor emissions associated with transport, transfer, vehicle fitting and operation of the latter have been reasonably well estimated. Because EDB has a much lower vapor pressure than gasoline, (12 vs ~ 400 Torr at 25° C), only slight losses can be expected. With the increasing population dominance of the newer production, controlled-vent automobile and the introduction of vapor recovery systems at gasoline and other pumping stations, this source of EDB emissions may not be significant. (See Section 3.7.5.B)

3.7.3 EDB Use in Pest Control

The data examined on the consumption of EDB for pest control were for the calendar year 1977. In that year, the Pesticide Enforcement Branch of the California State Food and Agriculture Department recorded applications totalling 515,378 lbs. This includes the use of EDB in both the neat form and as constituent in compounded products. The breakdown of this usage by types of applications are shown in Table 3- 21.

The usage of EDB is restricted by law and it is not permitted in products used in households. No exemptions are allowed in use, as is common with other pesticides, so that applications made either by commercial operators or by the farmers themselves must be reported to the State. Despite this requirement, the usage reports are probably on the low side since some illicit usage probably occurs.

KVB 26900-836

The quantity recorded for pest control is 0.75% of the amount consumed in doping gasoline in 1977. This agrees with the 0.5% fraction estimated by Johns for 1975 (Ref. 49). In view of the directed reduction of TEL concentration in gasoline, one would expect a higher relative farm usage of EDB after the two intervening years.

California is not a heavy user of EDB. Texas and Florida use considerably more of the chemical because of their problems in the control of fruit flies. These are exterminated in the larval stage by fumigating citrus fruit. This is done in confined structures, including transport trailers, sometimes near populated areas. California has yet to employ this technique, according to information reported to the State. If present trends in fruit fly populations within the State should worsen, EDB usage in California could greatly increase. Because of the way the chemical is handled for this particular application, special consideration of the associated emission factors would then have to be given.

Of the 58 counties in California, only 6 reported EDB usage to the Food and Agriculture Department in amounts that exceeded 1,000 lbs for the year 1977. Data for these counties and the type of application reported are given in Table 3-22. Usage data for all counties reporting EDB applications are mapped on Figure 3-14, which also outlines the major growing areas within the State. Most of the material applied involved one-time disinfection.

It would be noted from these data that almost 70% of the EDB reported for 1977 in pest control applications was used in two counties: Stanislaus and Imperial. Over 10% of the EDB used in pest control was applied to only 465 acres of watermelon fields in Imperial County. The Agricultural Commission of that county pointed out, however, that this small acreage was probably scattered in 40 to 80 acre plots throughout the county. The application rate of 120 lbs/acre involved there was exceeded in Fresno and Merced Counties, where 190 lbs/acre was applied to fallow farm land.

TABLE 3-22. EDB USAGE FOR PEST CONTROL IN CALIFORNIA
COUNTIES IN AMOUNTS EXCEEDING 1000 LB/YEAR DURING 1977

SOURCE: California Department of Food and Agriculture Files

| County | Application | EDB Applied, Lbs. | Acreage Treated |
|------------|------------------|-------------------|-----------------|
| Fresno | Fallow Farm Land | 5,400 | 30 |
| Imperial | Carrots | 66,354 | 1,773 |
| | Lettuce | 10,577 | 135 |
| | Parsnips | 3,408 | 100 |
| | Watermelon | 55,676 | 465 |
| | TOTAL | 136,015 | |
| Merced | Fallow Farm Land | 3,240 | 18 |
| Solano | Other Agencies* | 2,457 | -- |
| Stanislaus | Beans | 147,821 | 7,644 |
| | Tomatoes | 71,027 | 1,354 |
| | TOTAL | 218,848 | |
| Ventura | Beans | 4,729 | 82 |
| | Tomatoes | 1,584 | 115 |
| | TOTAL | 6,313 | |

*Material use controlled by other agencies, exact use not known.

KVB 26900-836

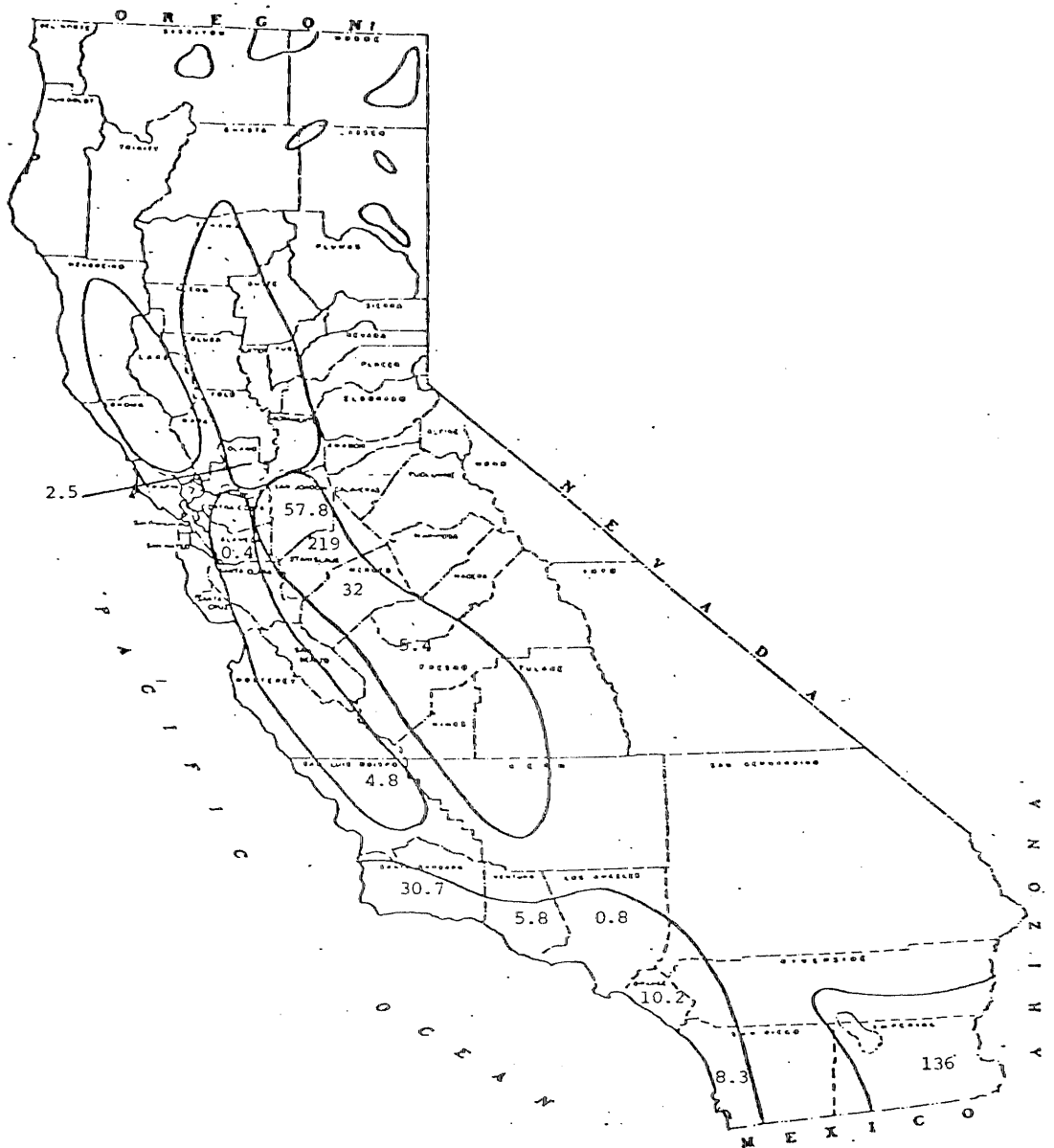


Figure 3-14. Ethylene dibromide₃ agricultural applications for 1977 by county (10 lbs).

KVB 26900-836

In considering these data, it should be borne in mind that the use of soil fumigants is much less regular than for other types of pesticides. The areas infected that must be treated vary considerably in both time and space. Thus the usage data for EDB maintained by the state can be expected to change considerably from year to year.

3.7.4 EDB Use in Other Applications

According to Johns (Ref. 49), some 14% of the National EDB production in 1975 was used as intermediate in production synthesis (5%) and in miscellaneous applications (9%), including that of specialty solvent. Processes in which EDB has been or may be utilized as a solvent or intermediate include the following:

- . Manufacture of some drugs
- . Fat processing
- . Fire extinguisher manufacture
- . Processing of certain gums and resins
- . Wool reclamation
- . Specialty-wax production
- . Synthesis of some chemicals

Attempts to locate any of these EDB use-points in the State were not rewarded. CALOSHA knew of no users for EDB aside from the gasoline producers and pesticide applicers. Representatives of the major EDB producers listed by Johns (Ref. 49) were also contacted with the following results:

KVB 26900-836

| <u>MANUFACTURER</u> | <u>COMMENT</u> |
|---|---|
| Ethyl Corporation | Manufacturing point - Magnolia, AR; all used in gasoline additive product |
| PPG Industries | Manufacturing point - Beaumont, TX; all used in gasoline |
| Northwest Industries (Velsecol Division) | Discontinued production |
| Dow Chemical | Manufacturing points - Magnolia, AR and Midland, MI; no solvent sales for EDB, no EDB shipped into California for intermediate synthetic use. |
| Great Lakes Chemical Corporation | Manufacturing point - El Dorado, AR; product used in pest control; little if any used in solvent or intermediate applications |

3.7.5 Emission Factors

A. Gasoline Production--

On an EPA-sponsored study (Ref. 50), the atmospheric concentration of EDB was measured at 50 and 400 ft downwind of bulk transfer and tank trunk loading operations at an oil refinery of unspecified capacity. Levels of 1.65 and 0.23 $\mu\text{g}/\text{m}^3$ EDB were determined, respectively. Based on the diffusion equation and using reasonable estimates for wind speed and vector coefficients, emission rates were calculated. These came to 65 mg/sec at 50 ft. and 1.7 mg/sec at 400 ft. or 4520 and 118 lb/yr, respectively. The calculations are shown in Appendix C.

On the KVB hydrocarbon survey of the South Coast Air Basin (Ref. 22), it was calculated from actual measurements at the Douglas refinery that the THC release from gasoline mixing, transfer, and storage operations was 38 lb/hr (24 hr-average).

KVB 26900-836

Assuming from the statistics already discussed [an average EDB content of 0.46 g/composite gal (regular, premium and unleaded)], one calculates a mol-fraction for EDB in gasoline of 8.4×10^{-5} . An average mol wt of 114 (octane) is applied to the gasoline itself. For an ideal solution, the partial pressure of the EDB over the liquid would then be 9.3×10^{-4} Torr, according to Henry's law. This corresponds to 3.8×10^{-4} wt % of the organic vapor phase, if one assumes a partial pressure of 400 Torr for the gasoline. Then, if a homogenous evaporation process operates (zero plate effect) in the ducts, vents and other loss-paths, the fraction of EDB in the THC releases can be calculated. In the case of the Douglas refinery, the EDB emission factor would be 1.3 lbs/yr, assuming no downtime. Factoring on the basis of relative gasoline capacities, the release rate for the State's largest refinery (Chevron U.S.A.-Richmond) would be 22 lbs/yr. The Douglas estimate agrees poorly with those derived by reverse diffusion calculations (118 to 4520 lbs/yr). In either case, the release rates may be too small to be of concern.

Because of the limited work that has been done in monitoring EDB anywhere, further air sampling should probably be conducted around refineries. It does not appear, however, that the levels will be found to be high. The ambient levels cited above, $0.23 - 1.65 \mu\text{g}/\text{m}^3$, are about a thousand-fold lower than the new stringent MAC (0.13 ppm or $1.0 \text{ mg}/\text{m}^3$) proposed by OSHA.

B. Gasoline Marketing and Consumption--

The only work done in this area that pertains to EDB was on the same EPA effort cited above (Ref. 50). Atmospheric concentrations of EDB were determined at urban roadway sites in three cities: Phoenix, Los Angeles, and Seattle. Each roadbed selected handled 25,000 to 30,000 vehicles per day and each site was situated within 200-300 ft downwind of two or more gasoline service stations. The results reported were:

26900-836

TABLE 3-23. ATMOSPHERIC CONCENTRATION OF EDB
AT URBAN ROADWAY SITES

| <u>City</u> | <u>Measured EDB $\mu\text{g}/\text{m}^3$</u> |
|-------------------------|---|
| Phoenix, Arizona | 0.07 |
| Los Angeles, California | 0.11 |
| Seattle, Washington | 0.08 |

Source: Ref. 50

These levels ranged to about one-tenth of the highest value reported for the refinery survey. Agreement between the urban sites was quite good and probably do not need to be validated with additional tests unless it is desired to quantitate traffic and gasoline station effects separately.

C. Pest Control--

EDB application rates of 100 lb/acre are reasonable (see Table 3-22). This is equivalent to a loading of about $2 \text{ mg}/\text{cm}^2$, or maximum (ideal flat surface) film thickness of only $10 \mu\text{m}$. Saturation volume would be about $16 \text{ cc}/\text{cm}^2$.

Typically, application is subsurface using hollow-shank fumigant applicators. After introduction into the infected fields, the furrows may be soil-filled to retard loss of the EDB. In terms of air pollution, the characterization of agricultural plots treated with EDB has not been undertaken.

A number of models have been developed for the estimation of pesticide release rates from various agricultural media. Those involving fumigants, include hydrological parameters as well as soil diffusion coefficients. Eureka Laboratories (Ref. 51) have reviewed these and, while acknowledging the difficulty of calculating pesticide evaporation from a hydrolytically active soil process, have recommended Hartley's equation (Ref. 52). This states that the pesticide release rate, dm_i/dt , is as follows:

KVB 26900-836

$$\frac{dm_i}{dt} = (Q_w)_v \cdot \frac{p_i (M_i)^{\frac{1}{2}}}{p_w (M_w)^{\frac{1}{2}}} + (Q_w)_L \cdot C_i$$

Where:

$(Q_w)_v$ = water loss rate, vapor

$(Q_w)_L$ = water loss rate, liquid

p_i = vapor pressure, pesticide

p_w = vapor pressure, water

M_i = molecular weight, pesticide

M_w = molecular weight, water

C_i = concentration of pesticide in soil water

The equation states, in effect, that release rate of pesticide is controlled by the rate of loss of water (liquid and vapor) from the soil in which the pesticide is incorporated. This implies that pesticide fugacity over a dry soil is zero, which is hardly likely.

In the Hartley equation, the final terms $(Q_w)_L \cdot C_i$, can be ignored. EDB has a very low solubility in water and liquid water movement in a fumigated field should be nil. Thus the equation reduces to the statement essentially that EDB evaporation will be 1.6 times the loss of water from the plot until all undegraded material is released. The hydrolytic decomposition and/or biodegradation of EDB would of course subtract from the evaporative loss.

Eureka Labs (Ref. 52) estimated that water evaporation rate (E_A) from soil moist enough to promote seedling growth is about 40% that of standard pan evaporation (E_{pan}) at the same temperature. Atmospheric humidity, which is an important parameter in this estimation, was based on Fresno County averages. Under conditions for soil fumigation, the soil may be drier and E_A would be quite low with respect to E_{pan} .

KVB 26900-836

In any case, KVB plotted in Figure 3-15 the relationship of Hartley's pesticide release rates against E_{pan} . Potential E_A values are assigned for fumigation with and without soil covering the furrows in the treated fields.* For reference purposes, the E_{pan} values for Fresno County for 1976 are listed in Table 3-24 together with the monthly average climatic conditions (Ref. 52).

It can be seen from Figure 3-15 that EDB release rates are greatly influenced by E_{pan} and the corresponding E_A , which is determined to a large degree by soil moisture (covering being absent). If all assumptions (particularly for E_A) are correct, for a covered field, all of the EDB would evaporate from the average Fresno field in less than two hours during the coldest month of the year. The loss would occur in a few minutes in July if the field were uncovered and wet enough to germinate seeds. An application rate of 100 lbs EDB/acre is still assumed.

*According to U. of Calif., Div. of Ag. Sciences leaflet 2903, less volatile fumigants should be chiseled in 12 to 14-inch in moist soil. Immediately after treating, the furrowed area should be cultipacked twice to retard fumigant loss.

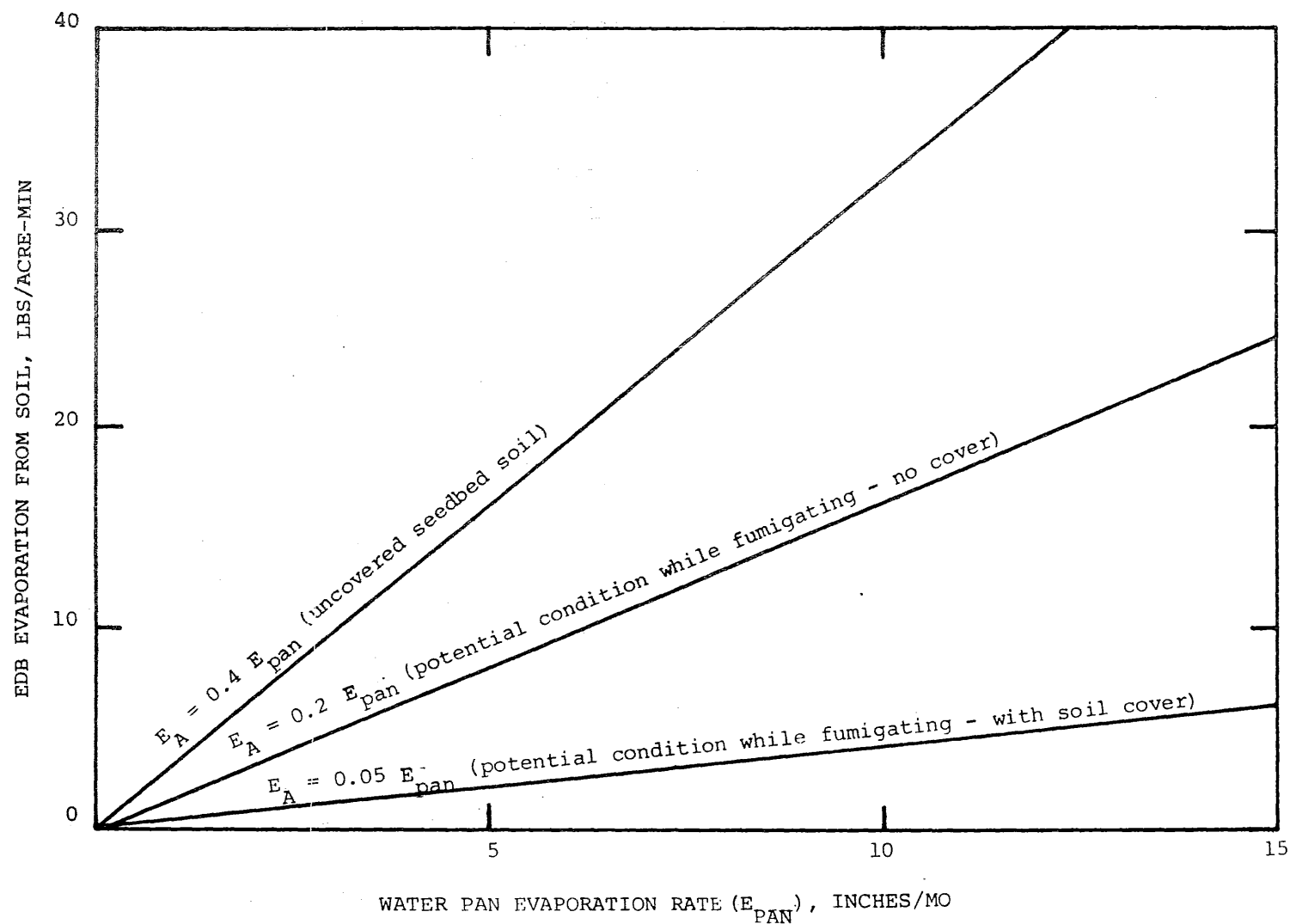


Figure 3-15. Estimated EDB evaporation rates from fumigated soil under different moisture conditions.

TABLE 3-24. GENERAL CLIMATOLOGICAL DATA FOR FRESNO COUNTY IN 1976

| Month | Wind Speed (mph) | R.H. (%) | Pan Evaporation (inches) | Temperature | |
|-----------|---------------------|-------------|--------------------------------|-------------|------|
| | | | | (°F) | (°C) |
| January | 3.4 | 75 | 1.76 | 44.3 | 6.8 |
| February | 5.1 | 80 | 2.39 | 49.6 | 9.8 |
| March | 6.7 | 65 | 4.13 | 52.4 | 11.3 |
| April | 6.2 | 60 | 5.49 | 57.2 | 14.0 |
| May | 6.9 | 44 | 10.81 | 69.7 | 20.9 |
| June | 8.4 | 41 | 12.48 | 73.0 | 22.8 |
| July | 9.0 | 44 | 14.71 | 79.4 | 26.3 |
| August | 8.1 | 58 | 10.07 | 72.7 | 22.6 |
| September | 6.4 | 62 | 7.96 | 72.2 | 22.3 |
| October | 4.3 | 65 | 4.98 | 65.1 | 18.4 |
| November | 4.1 | 80 | 2.33 | 53.4 | 11.9 |
| December | 4.0 | 69 | 1.72 | 46.5 | 8.1 |

Source: Eureka Laboratories (Ref. 52)

KVB 26900-836

EXHIBIT B



SMITH ENGINEERING & MANAGEMENT

DANIEL T. SMITH, Jr.
President

EDUCATION

Bachelor of Science, Engineering and Applied Science, Yale University, 1967
Master of Science, Transportation Planning, University of California, Berkeley, 1968

PROFESSIONAL REGISTRATION

California No. 21913 (Civil) Nevada No. 7969 (Civil) Washington No. 29337 (Civil)
California No. 938 (Traffic) Arizona No. 22131 (Civil)

PROFESSIONAL EXPERIENCE

Smith Engineering & Management, 1993 to present. President.
DKS Associates, 1979 to 1993. Founder, Vice President, Principal Transportation Engineer.
De Leuw, Cather & Company, 1968 to 1979. Senior Transportation Planner.
Personal specialties and project experience include:

Litigation Consulting. Provides consultation, investigations and expert witness testimony in highway design, transit design and traffic engineering matters including condemnations involving transportation access issues; traffic accidents involving highway design or traffic engineering factors; land use and development matters involving access and transportation impacts; parking and other traffic and transportation matters.

Urban Corridor Studies/Alternatives Analysis. Principal-in-charge for State Route (SR) 102 Feasibility Study, a 35-mile freeway alignment study north of Sacramento. Consultant on I-280 Interstate Transfer Concept Program, San Francisco, an AA/EIS for completion of I-280, demolition of Embarcadero freeway, substitute light rail and commuter rail projects. Principal-in-charge, SR 238 corridor freeway/expressway design/environmental study, Hayward (Calif.) Project manager, Sacramento Northeast Area multi-modal transportation corridor study. Transportation planner for I-80N West Terminal Study, and Harbor Drive Traffic Study, Portland, Oregon. Project manager for design of surface segment of Woodward Corridor LRT, Detroit, Michigan. Directed staff on I-80 National Strategic Corridor Study (Sacramento-San Francisco), US 101-Sonoma freeway operations study, SR 92 freeway operations study, I-880 freeway operations study, SR 152 alignment studies, Sacramento RTD light rail systems study, Tasman Corridor LRT AA/EIS, Fremont-Warm Springs BART extension plan/EIR, SRs 70/99 freeway alternatives study, and Richmond Parkway (SR 93) design study.

Area Transportation Plans. Principal-in charge for transportation element of City of Los Angeles General Plan Framework, shaping nations largest city two decades into 21st century. Project manager for the transportation element of 300-acre Mission Bay development in downtown San Francisco. Mission Bay involves 7 million gsf office/commercial space, 8,500 dwelling units, and community facilities. Transportation features include relocation of commuter rail station; extension of MUNI-Metro LRT; a multi-modal terminal for LRT, commuter rail and local bus; removal of a quarter mile elevated freeway; replacement by new ramps and a boulevard; an internal roadway network overcoming constraints imposed by an internal tidal basin; freeway structures and rail facilities; and concept plans for 20,000 structured parking spaces. Principal-in-charge for circulation plan to accommodate 9 million gsf of office/commercial growth in downtown Bellevue (Wash.). Principal-in-charge for 64 acre, 2 million gsf multi-use complex for FMC adjacent to San Jose International Airport. Project manager for transportation element of Sacramento Capitol Area Plan for the state governmental complex, and for Downtown Sacramento Redevelopment Plan. Project manager for Napa (Calif.) General Plan Circulation Element and Downtown Riverfront Redevelopment Plan, on parking program for downtown Walnut Creek, on downtown transportation plan for San Mateo and redevelopment plan for downtown Mountain View (Calif.), for traffic circulation and safety plans for California cities of Davis, Pleasant Hill and Hayward, and for Salem, Oregon.

TRAFFIC • TRANSPORTATION • MANAGEMENT
5311 Lowry Road, Union City, CA 94587 tel: 510.489.9477 fax: 510.489.9478

Transportation Centers. Project manager for Daly City Intermodal Study which developed a \$7 million surface bus terminal, traffic access, parking and pedestrian circulation improvements at the Daly City BART station plus development of functional plans for a new BART station at Colma. Project manager for design of multi-modal terminal (commuter rail, light rail, bus) at Mission Bay, San Francisco. In Santa Clarita Long Range Transit Development Program, responsible for plan to relocate system's existing timed-transfer hub and development of three satellite transfer hubs. Performed airport ground transportation system evaluations for San Francisco International, Oakland International, Sea-Tac International, Oakland International, Los Angeles International, and San Diego Lindberg.

Campus Transportation. Campus transportation planning assignments for UC Davis, UC Berkeley, UC Santa Cruz and UC San Francisco Medical Center campuses; San Francisco State University; University of San Francisco; and the University of Alaska and others. Also developed master plans for institutional campuses including medical centers, headquarters complexes and research & development facilities.

Special Event Facilities. Evaluations and design studies for football/baseball stadiums, indoor sports arenas, horse and motor racing facilities, theme parks, fairgrounds and convention centers, ski complexes and destination resorts throughout western United States.

Parking. Parking programs and facilities for large area plans and individual sites including downtowns, special event facilities, university and institutional campuses and other large site developments; numerous parking feasibility and operations studies for parking structures and surface facilities; also, resident preferential parking .

Transportation System Management & Traffic Restraint. Project manager on FHWA program to develop techniques and guidelines for neighborhood street traffic limitation. Project manager for Berkeley, (Calif.), Neighborhood Traffic Study, pioneered application of traffic restraint techniques in the U.S. Developed residential traffic plans for Menlo Park, Santa Monica, Santa Cruz, Mill Valley, Oakland, Palo Alto, Piedmont, San Mateo County, Pasadena, Santa Ana and others. Participated in development of photo/radar speed enforcement device and experimented with speed humps. Co-author of Institute of Transportation Engineers reference publication on neighborhood traffic control.

Bicycle Facilities. Project manager to develop an FHWA manual for bicycle facility design and planning, on bikeway plans for Del Mar, (Calif.), the UC Davis and the City of Davis. Consultant to bikeway plans for Eugene, Oregon, Washington, D.C., Buffalo, New York, and Skokie, Illinois. Consultant to U.S. Bureau of Reclamation for development of hydraulically efficient, bicycle safe drainage inlets. Consultant on FHWA research on effective retrofits of undercrossing and overcrossing structures for bicyclists, pedestrians, and handicapped.

MEMBERSHIPS

Institute of Transportation Engineers Transportation Research Board

PUBLICATIONS AND AWARDS

Residential Street Design and Traffic Control, with W. Homburger *et al.* Prentice Hall, 1989.

Co-recipient, Progressive Architecture Citation, *Mission Bay Master Plan*, with I.M. Pei WRT Associated, 1984.

Residential Traffic Management, State of the Art Report, U.S. Department of Transportation, 1979.

Improving The Residential Street Environment, with Donald Appleyard *et al.*, U.S. Department of Transportation, 1979.

Strategic Concepts in Residential Neighborhood Traffic Control, International Symposium on Traffic Control Systems, Berkeley, California, 1979.

Planning and Design of Bicycle Facilities: Pitfalls and New Directions, Transportation Research Board, Research Record 570, 1976.

Co-recipient, Progressive Architecture Award, *Livable Urban Streets, San Francisco Bay Area and London*, with Donald Appleyard, 1979.

EXHIBIT C



DEREK WATRY

Principal & President

Mr. Watry is experienced in all aspects of acoustics, including environmental noise, building acoustics, and mechanical system noise. He has measured and analyzed both noise and vibration for hundreds of projects. He has served as an expert witness at trial and mediation sessions related to noise disputes and accidents. Examples of community noise issue experience includes construction noise and vibration, highway and rapid transit noise, sports facility noise, and low-frequency music noise. He has both created and critiqued dozens of environmental assessment documents over his 28-year career. He has helped resolve complex community noise issues, interpreted local Noise Ordinances, established acceptability criteria, and analyzed sound transmission both in the outdoor environment and in buildings. He has been with Wilson Ihrig since 1992.

Education

- M.B.A., Saint Mary's College of California, Moraga, California
- M.S. Mechanical Engineering, University of California at Berkeley
- B.S. Mechanical Engineering, University of California at San Diego

Professional Associations

- *Member*, Acoustical Society of America
- *Member*, National Council of Acoustical Consultants

Legal Case Experience

Trial Testimony: Anderson v Carneiro, Calif. State Sup. Ct., Solano County

(Case No. N/A)

Noise complaint in multifamily building regarding replacement of carpet with oak floor. Testified for plaintiff. Result of bench trial unknown.

Trial and Deposition Testimony: Frost v Sweeney, Calif. State Sup. Ct., Alameda County

(Case No. VG05218793)

Noise complaint regarding new, backyard basketball court. Testified for plaintiff. Plaintiff prevailed at jury trial.

Trial Documents: Scott v Mex Rico, Calif. State Sup. Ct., San Francisco County

(Case No. CGC08-471804)

Resident Scott sued landlord Mex Rico over noise from upstairs neighbor. Prepared defense documents for defendant. Case dropped by plaintiff.

Trial and Deposition Testimony: Weisbrot v Lewin, Calif. State Sup. Ct., San Francisco County

(Case No. CGC-09-488562)

Tenant Weisbrot sued landlord for relief from noisy neighbor. Testified for plaintiff. Plaintiff prevailed at jury trial.

Binding Arbitration Testimony: Pham v Robson Homes, Judicial Arbitration and Mediation Service, San Jose, Calif.

(JAMS Ref. No. 1110013181)

Homeowners filed for rescission of homes purchase contracts on grounds that developer and real estate agents failed to disclose excessive train vibration. Testified for claimants. Matter settled.

Trial and Deposition Testimony: Dhillon v Tersini, Calif. State Sup. Ct., Santa Clara County
(Case No. 109CV137134)

Condominium owner Dhillon sued for rescission of home purchase contracts on grounds that developer and real estate agents failed to disclose noise issues. Expert witness for plaintiff. Bench rulings in favor of plaintiff.

Expert Consultant: Shaughnessy v Raintree HOA, Alameda Co. Sup. Ct., Calif.

(Case No. VG10534464)

Downstairs condo owner Shaughnessy sued both HOA and upstairs owner to compel replacement of hardwood flooring with carpet. Expert witness for defense (both upstairs owner and HOA jointly). Claim dropped at mediation session.

Trial and Deposition Testimony: Brady v Snapp, Calif. State Sup. Ct., Kern County

(Case No. S-1500-CV-271675-SPC)

Motorist Brady was struck by in-service ambulance at 60 mph at intersection. Acoustical opinion of whether Brady could have reasonably heard siren with time to react. Expert witness for plaintiff. Plaintiff prevailed at jury trial.

Expert Witness: Cobb v TEC, Calif. State Sup. Ct., San Mateo County

(Case No. CIV 505670)

Plaintiff Cobb making various damage claims stemming from noise emission from Tyco Electronics facility. Expert witness for defendant. Matter settled; settlement details not disclosed.

Expert Consultant: Tjandra v Kang, Calif. State Sup. Ct., San Francisco County

(Case No. CGC-13-528647)

Downstairs condo owner Tjandra suing upstairs owners Kang, et al over increased noise exposure resulting from the replacement of wood floor with marble floor. Expert consultant for defense. Matter settled.

Trial & Deposition Testimony: Garbar v CHT HOA, Calif. State Sup. Ct., San Francisco County

(Case No. CGC-04-432069)

Plaintiff claiming excessive heat and noise from penthouse mechanical room above 24th floor condominium. Cross-complaint claims effects due to plaintiff altering ceiling, encroaching on condo common space. Expert for defense. Bench ruled for defense.

Expert Consultant: Keating v Omran, Calif. State Sup. Ct., San Francisco County

(Case No. CGC-13-531010)

Upstairs tenant Keating complaint about construction (remodel) noise and music noise from downstairs owner/defendant unit. Expert for defense. Matter settled.

Expert Consultant: Train Grade Crossing Accident, Iowa

Freight train struck automobile at a grade crossing with complex visual, aural, and situational environment. Assessed ability of automobile driver to hear train horn. Expert for defense. Matter settled before formal claim was filed.

Expert Consultant: Marin v Westech, Fresno, Calif.

(E2B85677)

Construction worker Marin was struck by a piece of heavy equipment that was backing up. Assessed ability of Marin to hear backup alarm. Matter settled.

Expert Consultant: Frazier v Quinn/CCSF, Calif. State Sup. Ct., San Francisco County

(Case No. CGC-13-535089)

Motorcycle rider Frazier was struck by a CCSF firetruck with lights and sirens at a blind intersection. Assessed ability of plaintiff to hear siren. Expert for defense. Matter settled.

Expert Consultant: Cevalasco v Amtrak, Martinez, Calif.

Cevalasco was trespassing on Union Pacific Railroad right-of-way when she was struck by a passing Amtrak train. Assessed ability of plaintiff to hear train horn. Expert for defense. Matter settled.

Expert Consultant: Escobar v Asplundh Tree Expert, Calif. State Sup. Ct., Los Angeles County
(Case No. BC504541)

Deputy Sheriff Escobar was driving with lights and siren and is claiming he lost control of his vehicle because an ATE truck failed to yield. Assessed ability of truck driver to hear siren. Expert for defense. Matter settled.

Expert Consultant: He v Belfor, Calif. State Sup. Ct., Alameda County

(Case No. RG15777451)

Belfor was hired to restore He's condominium after a flooding incident. Belfor deployed many large fans and dehumidifiers. He, who is elderly, claimed the noise from these precluded her from sleeping which led to a damaging fall. Advise plaintiff's attorney on the effects of noise on sleep disturbance. Matter settled.

Expert Consultant: Woods v CCSF, Calif. State Sup. Ct., San Francisco County

(Case No. CGC-14-537042)

Woods became snagged by a passing SF Municipal Railway historic streetcar and dragged for hundreds of feet while passengers and people outside the train tried to signal operator to stop. Retained to assess operator's ability to hear various audible signals. Expert for defense. Matter settled.

Expert Consultant: Perez-Lopez v CCSF, U. S. District Ct., Northern District of Calif.

(Case No. CV15-01846-HSG)

Perez-Lopez was ordered by S.F. police officers to drop a large kitchen knife and was then fatally shot. Assessed ability of officers to hear sound of dropped knife hitting the road surface. Expert for defense. Matter settled.

Expert Consultant: Tieu v Valaris, Calif. State Sup. Ct., San Francisco County

(Case No. CGC-15-549624)

Motorcycle rider Valaris struck a pedestrian who was crossing the street at midblock. Retained to assess ability of pedestrian to hear approaching motorcycle. Expert for defense. Ongoing.

Expert Consultant: Bulstrode v BNSF, Okla. Circuit Court., County of Garfield

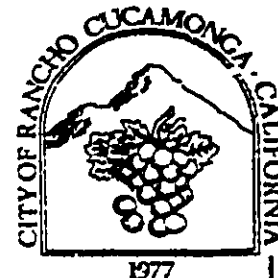
(Case No. CJ-2015-161)

Motorist Bulstrode was struck by a train at a rural grade crossing in Oklahoma. Retained for technical review of work by others. Expert for defense. Matter settled.

ATTACHMENT B

**MARCH 24, 1982 STAFF REPORT FOR ENVIRONMENTAL ASSESSMENT AND
CONDITIONAL USE PERMIT 82-01 – PIC “N” SAVE**

CITY OF RANCHO CUCAMONGA
STAFF REPORT



DATE: March 24, 1982

TO: Members of the Planning Commission

FROM: Rick Gomez, City Planner

BY: Dan Coleman, Assistant Planner

SUBJECT: ENVIRONMENTAL ASSESSMENT AND CONDITIONAL USE PERMIT 82-01 -
PIC 'N' SAVE - The development of a 850,000 square foot
warehouse distribution center, offices, truck service
center, and a 25,000 square foot retail store on 91.4
acres of land in the General Industrial category to be
located on the north side of 4th Street, 2300' west of
Etiwanda - APN 229-283-50, 51

SUMMARY: This project has been reviewed by the Design and Development Review Committees and has undergone revisions per those Committee's comments and is ready for the Commission's consideration. The following Staff Report and Conditions of Approval are provided for your review.

BACKGROUND: The proposed development consists of an 850,000 square foot warehouse distribution center, offices, truck service center, and a 25,000 square foot retail store to be located on 39.34 acres of 91.4 acres of land. The remainder of the project site is not proposed for development at this time. The project site is located on the north side of 4th Street, approximately 2300' west of Etiwanda (Exhibit "A"). The site presently has no existing structures and is utilized as a vineyard. The Natural Features Map, Exhibit "H", indicates the existing natural drainage channel that runs diagonally through the site from the northeast to the southwest. With the exception of the drainage channel, the property naturally slopes from the north to the south at approximately a 1½% grade. The project site is bounded on the west by the Southern California Edison right-of-way and on the east by undeveloped land. To the south is 4th Street and undeveloped land, and on the north is the future 7th Street and undeveloped land. The property is designated as General Industrial and Heavy Industrial in the Industrial Specific Plan. The south 39.34 acres proposed for development at this time lies entirely within the General Industrial category, which requires a Conditional Use Permit for retail sales.

ITEM C

0120 0073

ANALYSIS: The Site Development Plan, Exhibit "B", has been developed in accordance with the Industrial Specific Plan requirements. The warehouse distribution center is placed 475' from 4th Street. All loading docks and truck service areas are located on the south and east elevations and screened from public view by 14' screen walls, berming and landscaping. The retail store will front on 4th Street and will have separate access and parking lot. The primary access point for the warehouse distribution center will be along the east property line. A secondary access point is being provided along the west property line primarily for fire department access and truck deliveries to the retail store. In addition, a fire access lane will be required at the east end of the retail store parking lot.

The parking area for the warehouse distribution center is located adjacent to the office portion of the building. This parking area will consist of 228 parking stalls in order to accommodate the estimated 100 employees and visitors. The retail store parking lot is designed in accordance with the Industrial Specific Plan.

The Applicant intends to construct 7th Street along the north project boundary, and it is recommended that this include parkway landscaping and irrigation.

The Grading and Drainage Plan, Exhibit "G", proposes to drain on-site water into catch basins and storm drains that will connect with the storm drain system in 4th Street. The Grading Committee has approved the Conceptual Grading Plan. This project will be required to provide all on-site and off-site drainage facilities in order to accommodate the drainage flows that would result from this project.

The Design Review Committee has met with the Applicant to discuss the design of this facility. After revisions, the design is now being presented to the Planning Commission for their consideration. The elevations for the warehouse building, Exhibits "F-1" and "F-2", indicate a precast concrete panel building. The Design Review Committee has recommended approval of the design subject to providing a color band along the upper one-third of the south, east and west building elevations. The precast concrete panels should include an indentation or rib at the top and bottom of the colored band. Because of the scale of the building, the Committee recommends that the color band be approximately three feet in width.

The retail store building, as shown in Exhibit "E", proposes a precast concrete with a natural finish, stucco walls, glass, and supporting columns. The south and east elevations of the retail store will include planter beds at the top of screen walls with cascading plant material. The Design Review Committee was concerned with the screening of the truck dock and loading area on the west elevation of the retail store. The Committee recommended that the screen wall and planter bed be extended from the loading dock for the full length of the loading ramp. Detailed colored renderings and building elevations will be available at the Planning Commission meeting for your review.

The project has been designed to minimize the visual impact of the large warehouse distribution center by a combination of increased setbacks, screen walls, berming, and landscaping. Exhibit "J" provides line-of-sight cross sections through the project site at three locations. This illustrates how vehicular or pedestrian traffic on 4th Street will not be able to see the entire warehouse building because of the 10' high screen walls. The truck loading area on the south side of the warehouse building will not be visible from 4th Street. However, the loading dock along the east elevation of the warehouse building could be visible from west bound traffic on 4th Street; therefore, it is recommended that landscaping be emphasized along the east property line. The cross sections contained in Exhibit "I" illustrate the use of berming and different varieties of plant material for maximum buffering and screening.

The attached Illustrative Site Plan, Exhibit "C", indicates the abundant use of landscaping throughout the project site and the types of plant materials to be used. Landscaping on 4th Street will be provided in accordance with Special Boulevard landscaping standards and the Industrial Specific Plan requirements. A blow-up of the Illustrative Site Plan, Exhibit "D", shows the landscaping treatment at the entry to the office portion of the distribution center. Texturized paving, accent trees, mounding, outdoor furniture, and a basketball court are proposed.

Part I of the Initial Study, as completed by the Applicant, is provided for your review and consideration. Staff has completed Part II of the Initial Study and determined that although the project could have a significant adverse impact on the environment, adequate mitigating measures have been proposed to eliminate any significant adverse impact. If the Commission concurs with such findings, then the issuance of a Negative Declaration would be in order.

Conditional Use Permit 82-01/Pic 'N' Save
Planning Commission Agenda
March 24, 1982
Page 4

CORRESPONDENCE: A Notice of Public Hearing was placed in The Daily Report newspaper. In addition, approximately five public hearing notices were sent to property owners within 300 feet of the project site. To date, no correspondence has been received either for or against this project.

RECOMMENDATION: It is recommended that the Planning Commission conduct a public hearing to consider public input and elements of this project. If, after such consideration the Commission concurs with the findings and Conditions of Approval as recommended, then the adoption of the attached Resolution and Negative Declaration would be appropriate.

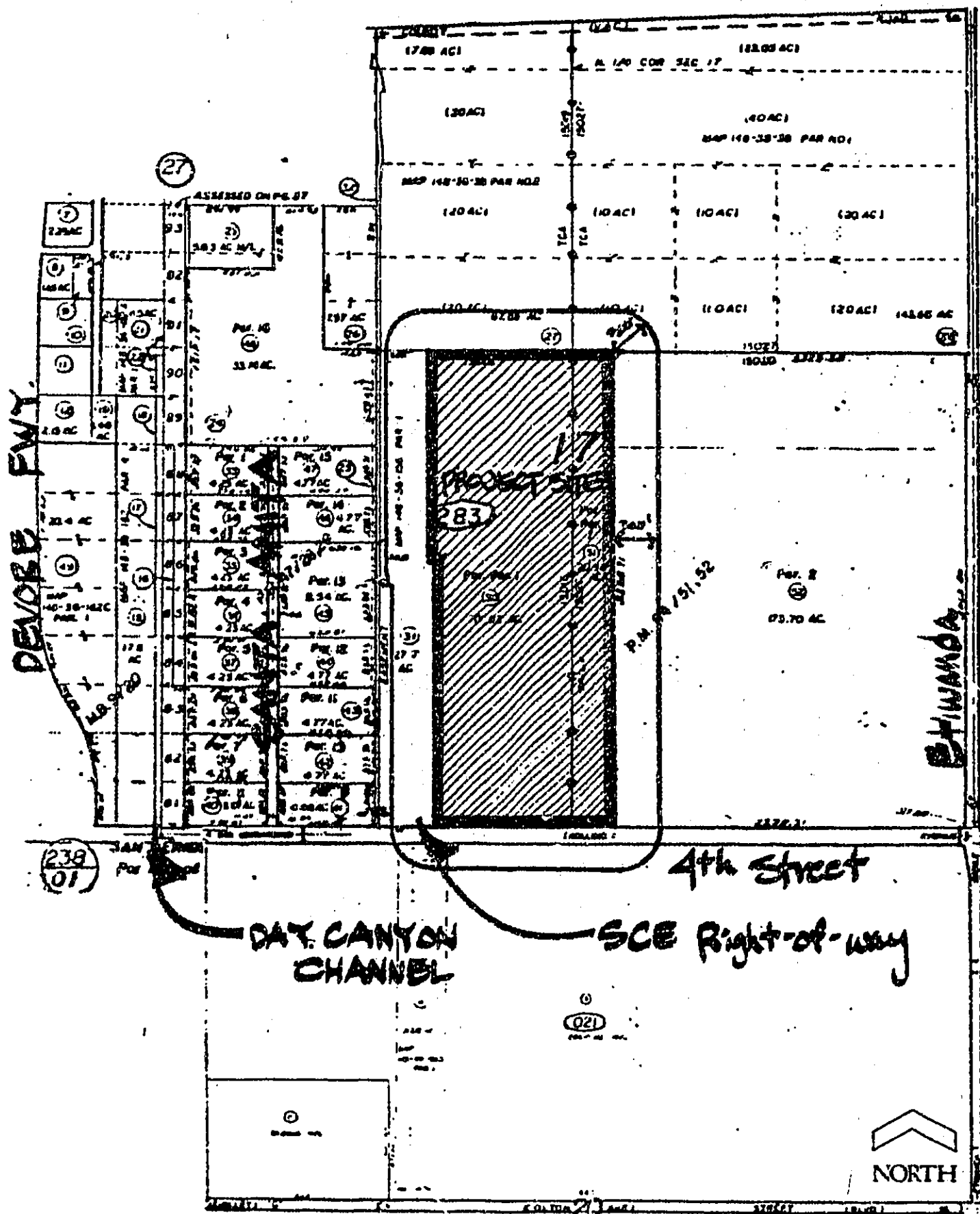
Respectfully submitted,



RICK GOMEZ
City Planner

RG:DC:jr

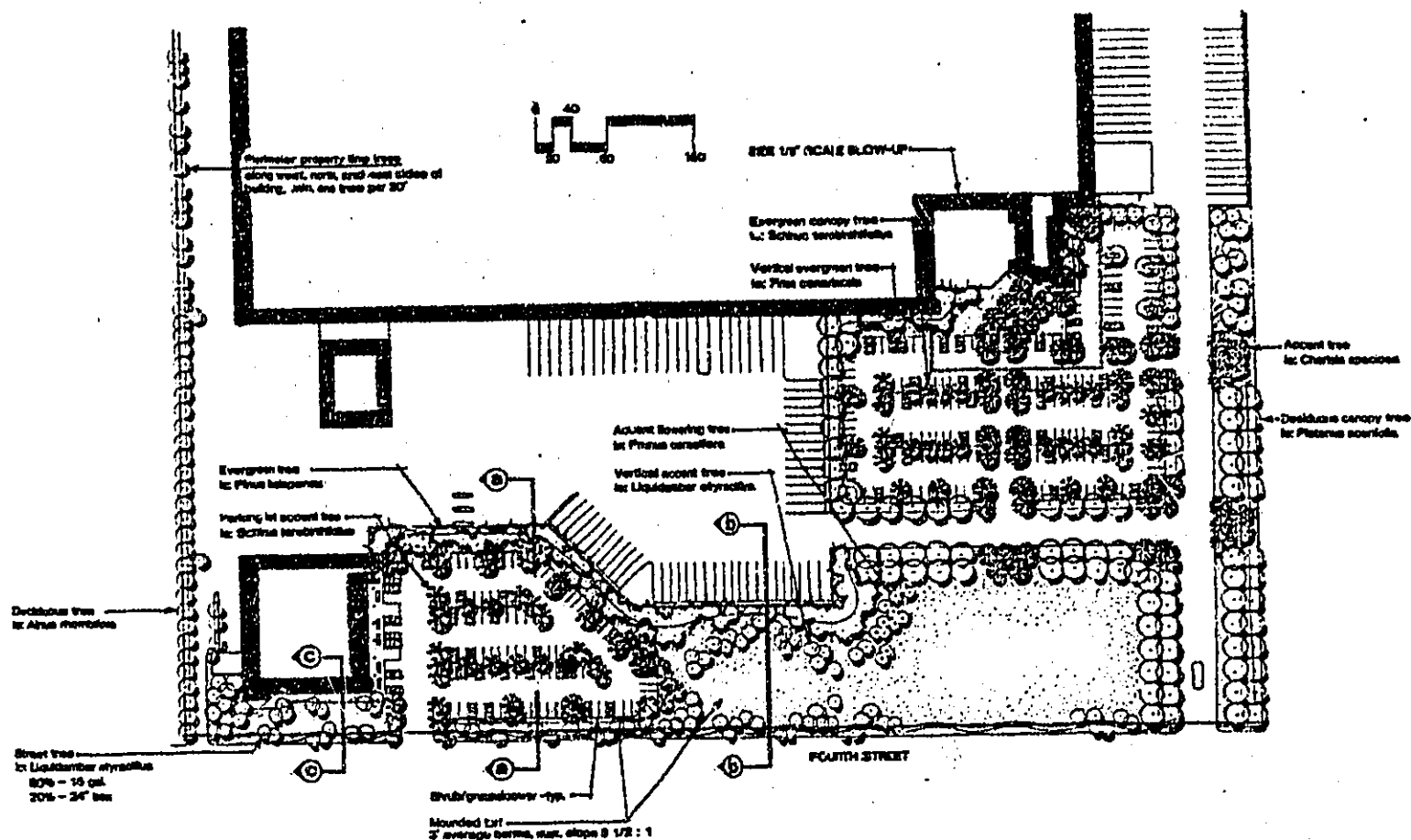
Attachments: Exhibit "A" - Location Map
 Exhibit "B" - Detailed Site Plan
 Exhibit "C" - Illustrative Site Plan
 Exhibit "D" - Office Detail
 Exhibit "E" - Retail Store, Elevations, and Site Plan
 Exhibits "F-1" & "F-2" - Elevations
 Exhibit "G" - Conceptual Grading Plan
 Exhibit "H" - Natural Features Map
 Exhibit "I" - Sections
 Exhibit "J" - Line-of-Sight
 Part I, Initial Study
 Resolution
 Conditions



CITY OF
RANCHO CUCAMONGA
PLANNING DIVISION

ITEM: CUP 82-01
TITLE: LOCATION MAP
EXHIBIT: A SCALE: _____

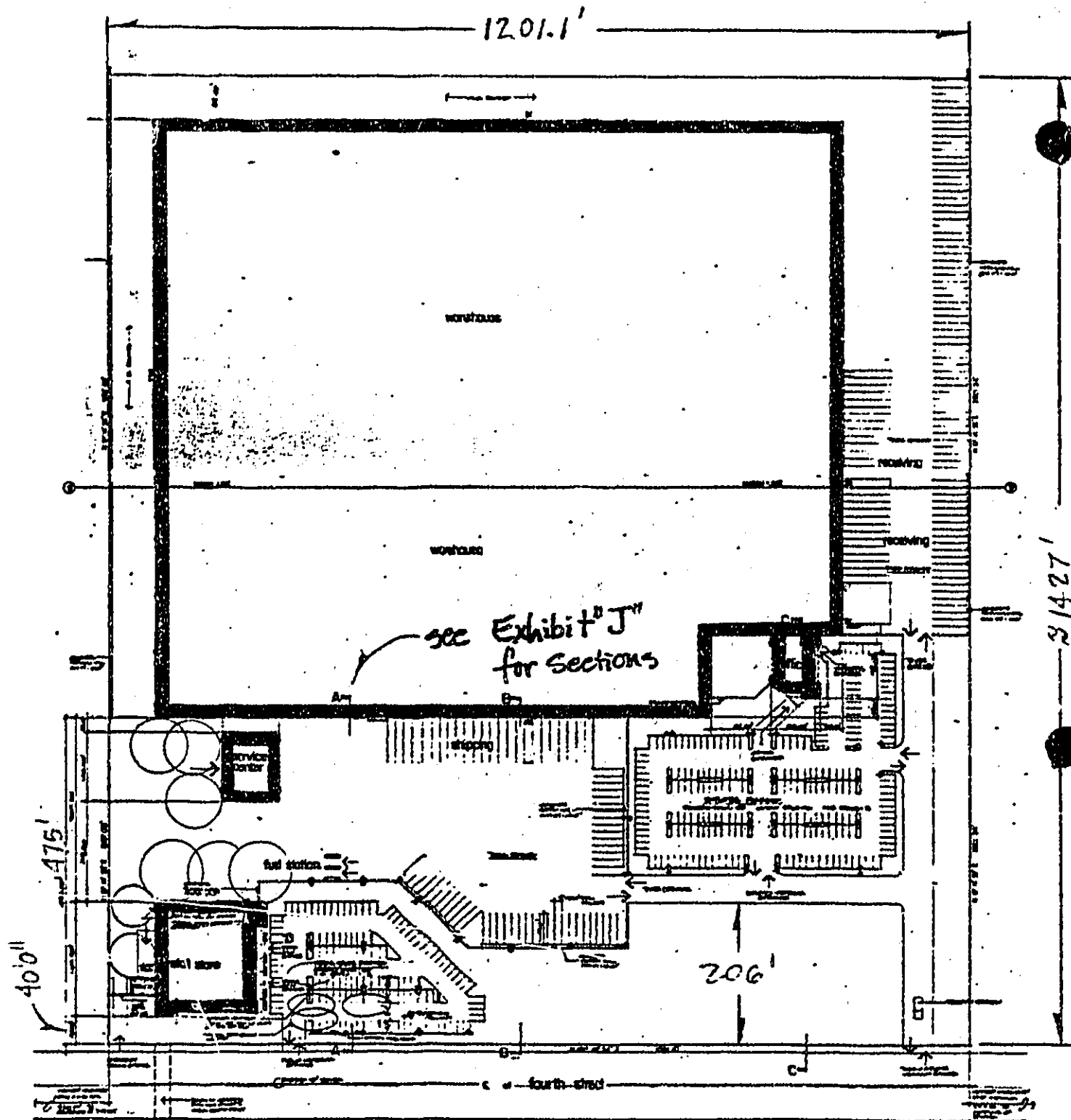
0130 0077



CITY OF
RANCHO CUCAMONGA
PLANNING DIVISION

ITEM: CUP 82-01
TITLE: ILLUSTRATIVE SITE PLAN
EXHIBIT: C SCALE: —

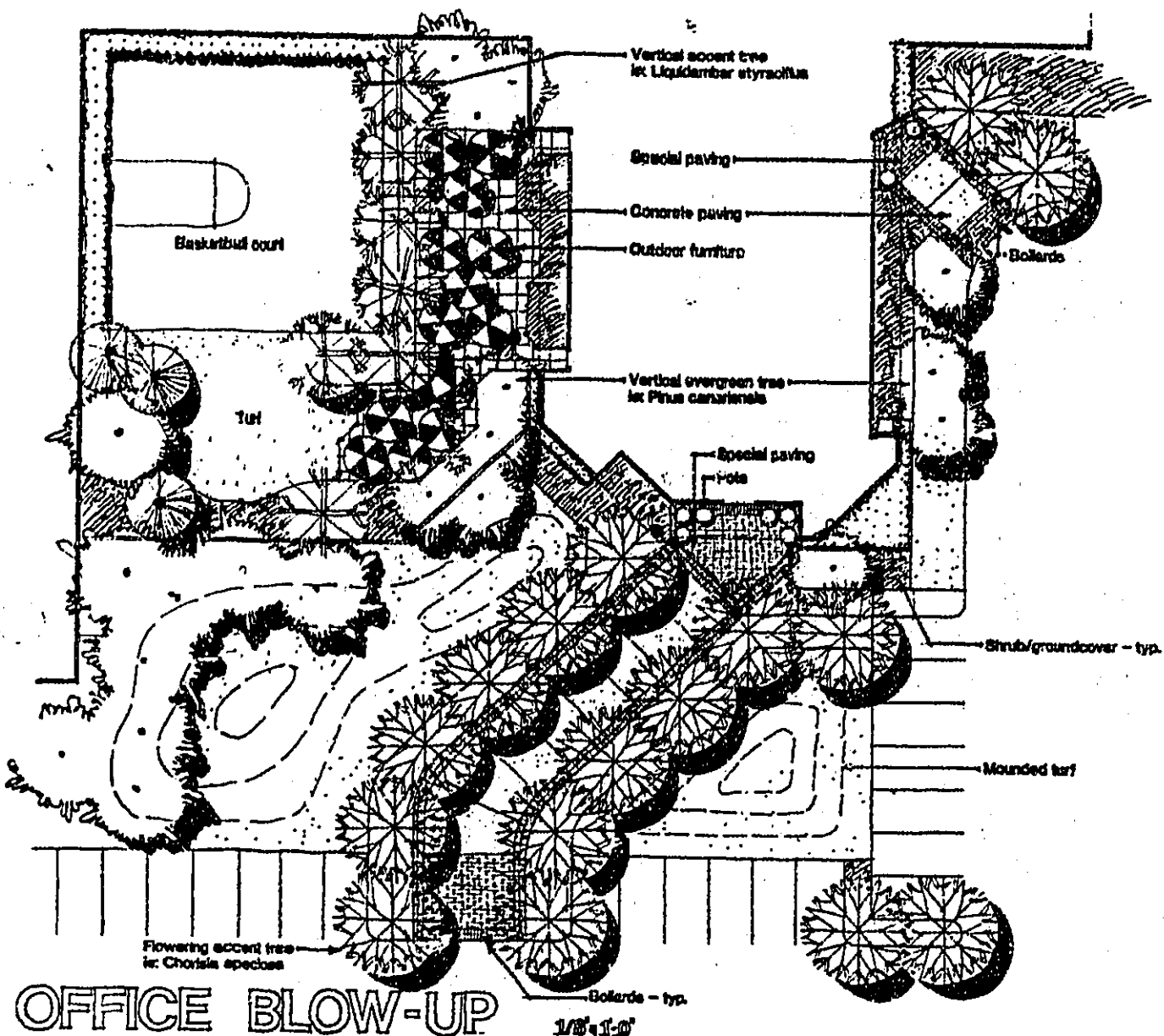
7120 0078



CITY OF
RANCHO CUCAMONGA
PLANNING DIVISION

ITEM: CUP 82 01
TITLE: DETAILED SITE PLAN
EXHIBIT: B SCALE: —

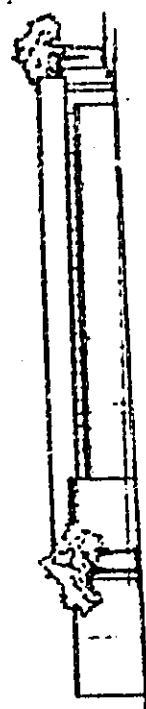
0420 0074



CITY OF
RANCHO CUCAMONGA
PLANNING DIVISION

ITEM: CUP 8201
TITLE: OFFICE DETAIL
EXHIBIT: D SCALE: —

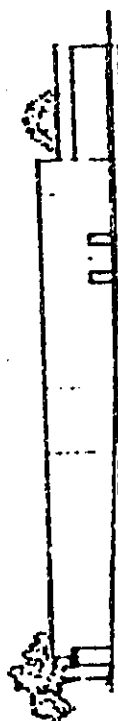
0120 0000



south elevation



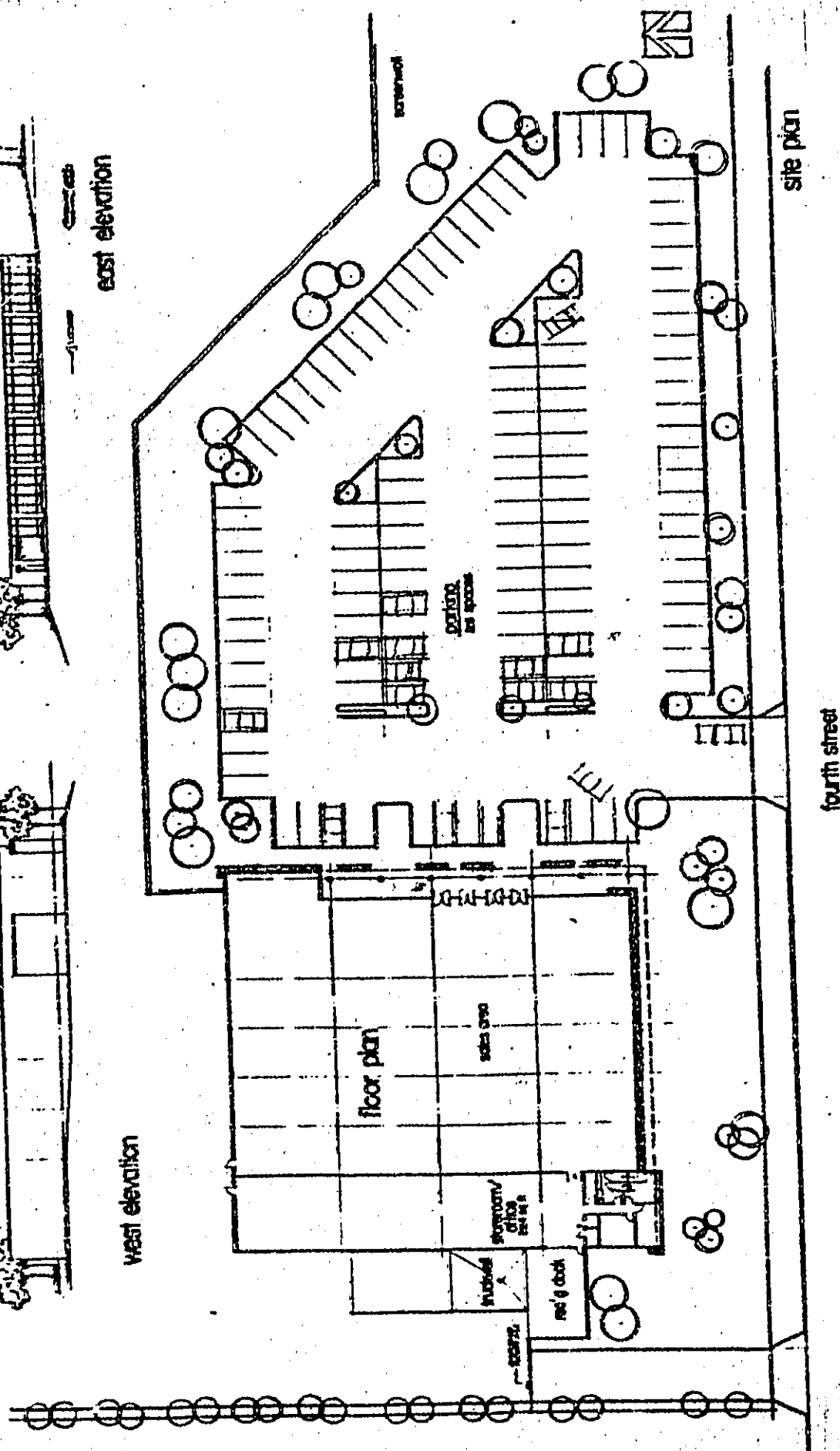
east elevation



north elevation

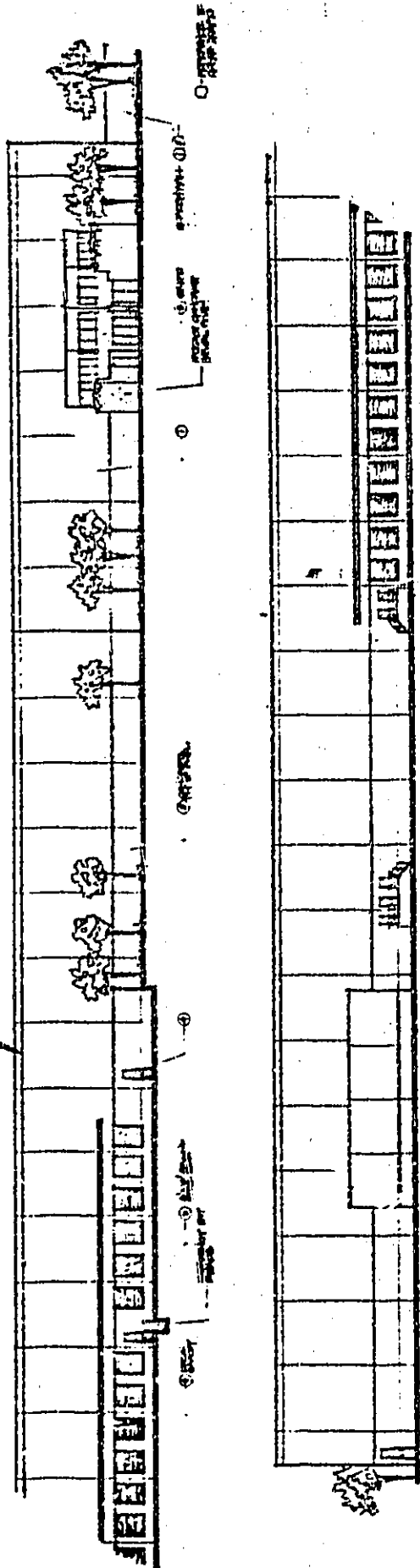


west elevation



CUP 82-01
RETAIL STORE PLAN
Exhibit "E"

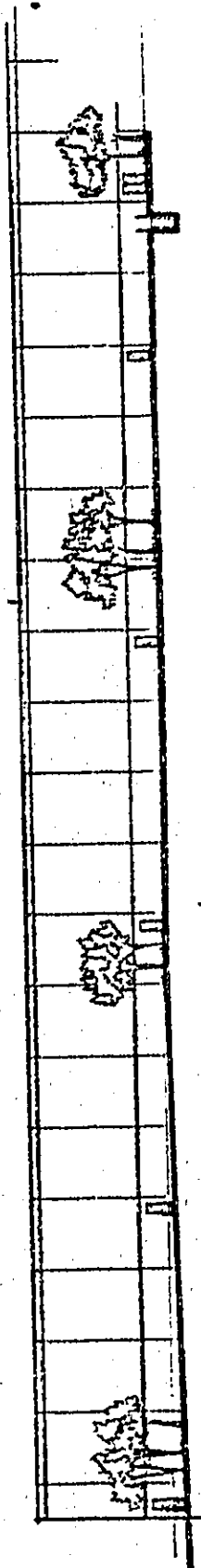
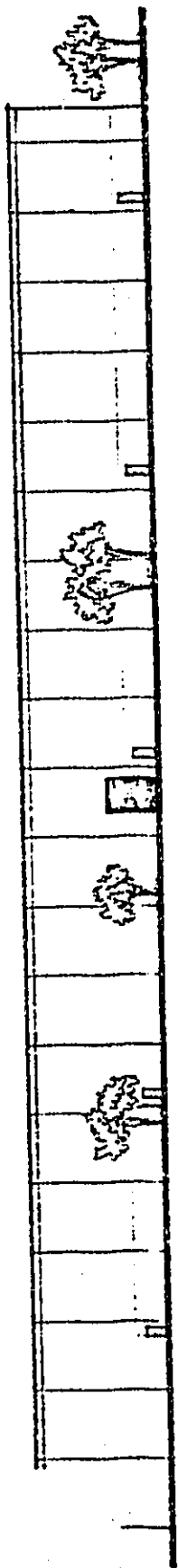
color band



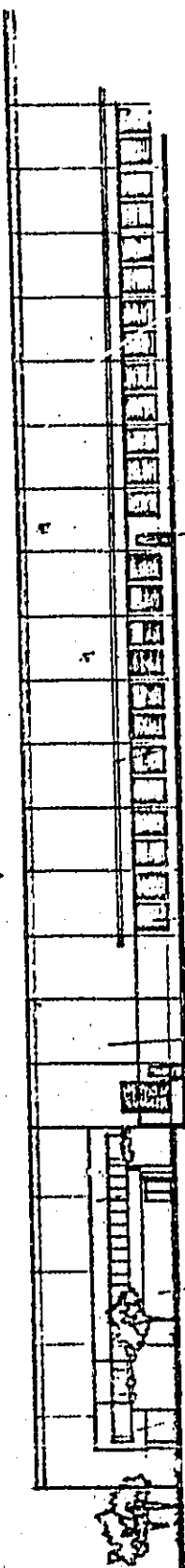
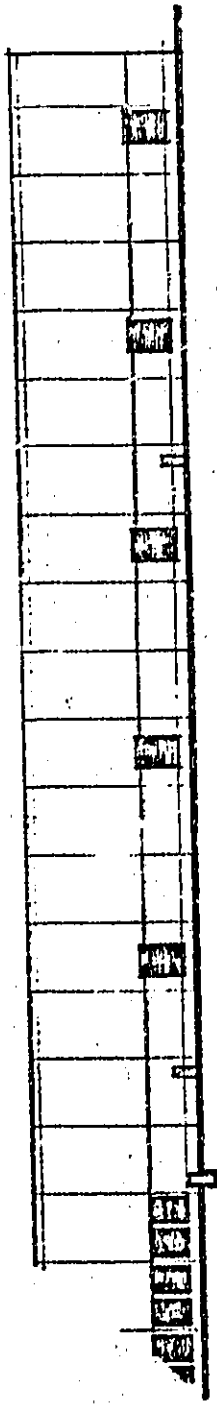
south elevation

west elevation

CUP 82-01
ELEVATIONS
Exhibit "F.1"



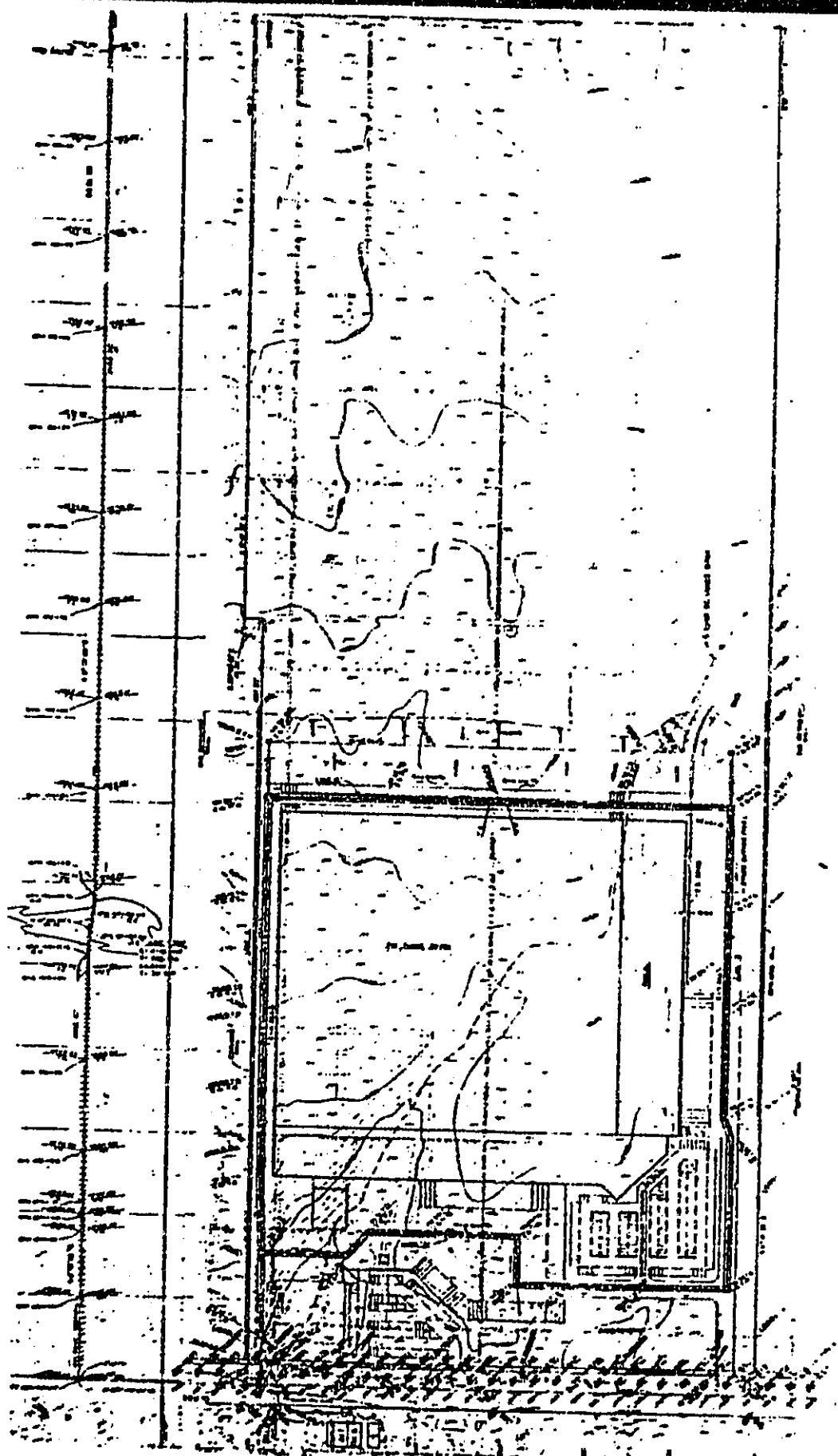
north elevation



east elevation

0 1200 0083

CUP 82-01
ELEVATIONS
Exhibit "F-2"

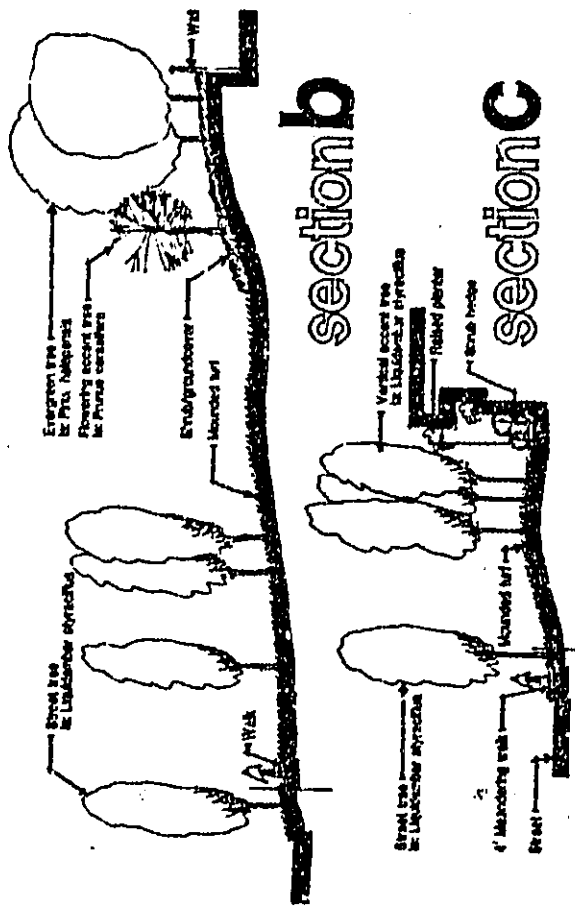
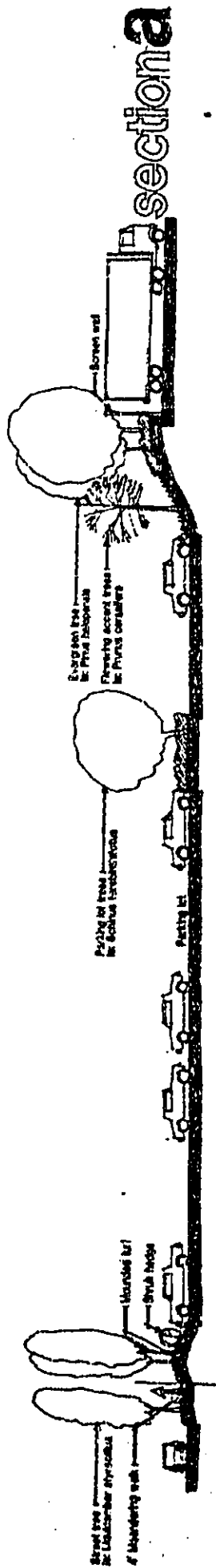


NORTH

CITY OF
RANCHO CUCAMONGA
PLANNING DIVISION

ITEM: CUP 82.01
TITLE: CONCEPTUAL GRADING
EXHIBIT: 61 SCALE: —

0120 0004

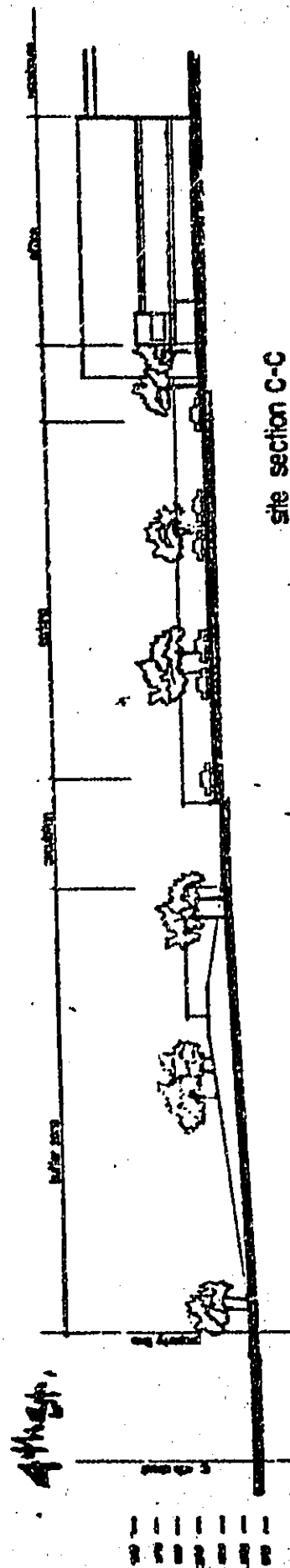
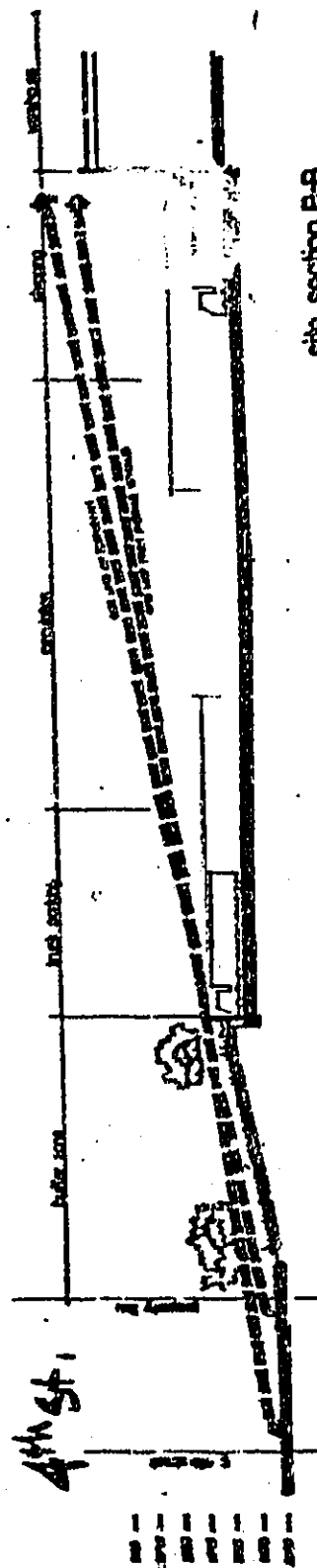
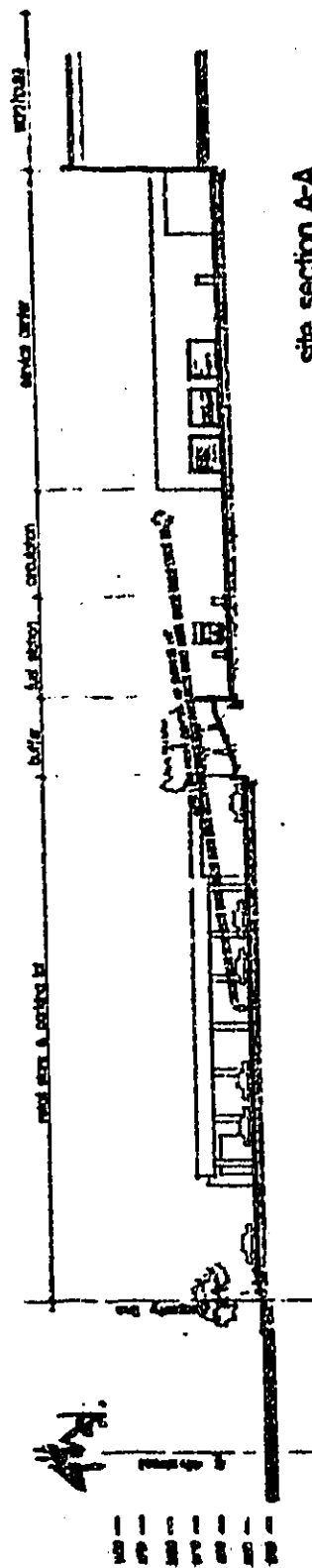


NOTE: SEE ILLUSTRATIVE SITE PLAN FOR SECTION & BLOW-UP LOCATION



ITEM: CUP 82-01
 TITLE: SECTIONS
 EXHIBIT: I SCALE: —

0120 0086



LINE OF SIGHT / CUP 82-01
SECTION 5
EXHIBIT "J"

0120 0007

CITY OF RANCHO CUCAMONGA
INITIAL STUDY

PART I - PROJECT INFORMATION SHEET - To be completed by applicant
Environmental Assessment Review Fee: \$87.00

For all projects requiring environmental review, this form must be completed and submitted to the Development Review Committee through the department where the project application is made. Upon receipt of this application, the Environmental Analysis staff will prepare Part II of the Initial Study. The Development Review Committee will meet and take action no later than ten (10) days before the public meeting at which time the project is to be heard. The Committee will make one of three determinations: 1) The project will have no significant environmental impact and a Negative Declaration will be filed, 2) The project will have a significant environmental impact and an Environmental Impact Report will be prepared, or 3) An additional information report should be supplied by the applicant giving further information concerning the proposed project.

PROJECT TITLE: PIC N SAVE DISTRIBUTION FACILITY

APPLICANT'S NAME, ADDRESS, TELEPHONE: West Coast Liquidators
2430 E. Del Amo Blvd.
Carson, CA (213) 537-9220

NAME, ADDRESS, TELEPHONE OF PERSON TO BE CONTACTED
CONCERNING THIS PROJECT: Mike Schau or Douglas A. Lowe, AIA
1419 Second Street
Santa Monica, CA 90401 (213) 451-8491

LOCATION OF PROJECT (STREET ADDRESS AND ASSESSOR PARCEL NO.)
Parcel No. 229 - 283 - 50 & 51, on 4th Street
2372 East of Etiwanda on the North side

LIST OTHER PERMITS NECESSARY FROM LOCAL, REGIONAL, STATE AND
FEDERAL AGENCIES AND THE AGENCY ISSUING SUCH PERMITS: _____
N/A at this time

PROJECT DESCRIPTION

DESCRIPTION OF PROJECT: The project consists of an
850,000 SF Distribution Center, a 10,000 SF Office
Building, and a 25,000 SF PLU N SAVE Store

ACREAGE OF PROJECT AREA AND SQUARE FOOTAGE OF EXISTING AND
PROPOSED BUILDINGS, IF ANY:

0.6± Acre parcel with no existing buildings.

DESCRIBE THE ENVIRONMENTAL SETTING OF THE PROJECT SITE
INCLUDING INFORMATION ON TOPOGRAPHY, PLANTS (TREES),
ANIMALS, ANY CULTURAL, HISTORICAL OR SCENIC ASPECTS, USE
OF SURROUNDING PROPERTIES, AND THE DESCRIPTION OF ANY
EXISTING STRUCTURES AND THEIR USE (ATTACH NECESSARY SHEETS):

The site presently has no existing structures and is
utilized as a vineyard. The property naturally slopes

about 1½% from North to South. The South side fronts on
4th Street; proposed 7th Street on the North; a Santa
Fe lead track and Edison easement border is on the West;
and the property to the East boundary is zoned General
Industrial.

Is the project, part of a larger project, one of a series
of cumulative actions, which although individually small,
may as a whole have significant environmental impact?

Since the area is presently zoned general industrial
our project will have no significant impact.

WILL THIS PROJECT:

YES NO

- XX 1. Create a substantial change in ground contours?
- XX 2. Create a substantial change in existing noise or vibration?
- XX 3. Create a substantial change in demand for municipal services (police, fire, water, sewage, etc.)?
- XX — 4. Create changes in the existing zoning or general plan designations?
- XX 5. Remove any existing trees? How many? _____
- XX 6. Create the need for use or disposal of potentially hazardous materials such as toxic substances, flammables or explosives?

Explanation of any YES answers above:

The retail store on the Southwest corner of
said property requires C.U.P.

IMPORTANT: If the project involves the construction of residential units, complete the form on the next page.

CERTIFICATION: I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this initial evaluation to the best of my ability, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. I further understand that additional information may be required to be submitted before an adequate evaluation can be made by the Development Review Committee.

Date 1/28/82

Signature Marvin H. Franke

Title Dir. of Real Estate
West Coast Liquidators/Re N. face

ATTACHMENT TO INITIAL STUDY PART II

CUP 82-01

- 1c. The proposed project will involve substantial grading to eliminate the existing natural drainage channel running through the site. However, the proposed Grading Plan has been designed to accommodate the changes in the surface water drainage pattern.
- 2a,b,c. The project may have significant changes in drainage patterns, alter the course of flood waters, or change the course of directions of ephemeral stream channels. Adequate irrigation measures have been incorporated into the Grading and Drainage Plan. Hydrology calculations will be required prior to issuance of Grading Permits to ensure that the proposed drainage structures can accommodate on and off-site surface water runoff.
- 8a,c. Significant impacts may result in terms of additional vehicular movement and demand for new parking facilities as a result of this project. 4th Street has been designed and constructed to accommodate traffic generated by this project. Adequate off street parking has been provided.

RESOLUTION NO.

A RESOLUTION OF THE RANCHO CUCAMONGA PLANNING COMMISSION APPROVING CONDITIONAL USE PERMIT NO. 82-01 FOR A WAREHOUSE DISTRIBUTION CENTER AND RETAIL STORE LOCATED ON THE NORTH SIDE OF 4TH STREET, APPROXIMATELY 2300' WEST OF ETIWANDA IN THE GENERAL INDUSTRIAL LAND USE CATEGORY

WHEREAS, on the 29th day of January, 1982, a complete application was filed by West Coast Liquidators for review of the above-described project; and

WHEREAS, on the 24th day of March, 1982, the Rancho Cucamonga Planning Commission held a public hearing to consider the above-described project.

NOW, THEREFORE, the Rancho Cucamonga Planning Commission resolved as follows:

SECTION 1: That the following findings can be met:

1. That the proposed use is in accord with the General Plan, and the purposes of the zone in which the use is proposed; and
2. That the proposed use, together with the conditions applicable thereto, will not be detrimental to the public health, safety, or welfare, or materially injurious to properties or improvements in the vicinity; and
3. That the proposed use will comply with each of the applicable provisions of the Zoning Ordinance.

SECTION 2: That this project will not create adverse impacts on the environment and that a Negative Declaration is issued on March 24, 1982.

SECTION 3: That Conditional Use Permit No. 82-01 is approved subject to the following conditions:

PLANNING DIVISION

1. A color band, approximately three feet in width, shall be provided along the upper one-third of the south, east and west elevations of the warehouse building.
2. The screen wall and planter bed for the retail store truck dock shall be extended to screen the loading dock.

0120 0092

3. A texturized treatment shall be used on the street side of the 14' screen walls.
4. The landscaping requirements of the Industrial Specific Plan shall be included in the detailed landscape and irrigation plans.
5. Along the east property line, 15 gallon size trees shall be planted every fifteen feet to screen the truck loading docks.
6. The landscaping and irrigation design shall take into account water and energy conservation in accordance with General Plan policies, through the use of drought tolerant plant material, alluvial rockscape, and special irrigation techniques such as drip irrigation.
7. The fire access lane for the retail store parking area shall be constructed of a layer of decomposed granite, and overlaid with top soil and turf.
8. The construction of 7th Street street improvements shall include parkway landscaping and irrigation. Separate detailed landscape and irrigation plans shall be submitted for Planning and Engineering Division approval prior to installation.
9. A sand and grease interceptor shall be installed on the sewer line for the truck service building. The truck wash area must drain into the sand and grease interceptor.
10. Detailed plans for the landscaping and irrigation of the 4th Street median island shall be submitted to and approved by the Planning and Engineering Divisions prior to installation.

ENGINEERING DIVISION

11. Developer shall be required to submit a detailed hydrologic and drainage study for the entire area tributary to the project, to the City Engineer for review prior to issuance of any grading or building permits.
12. Developer shall install 7th Street easterly to Etiwanda Avenue with a minimum of 26-foot wide pavement within a 40-foot wide dedicated right-of-way.

0120 0093

13. All pertinent requirements of Parcel Map 6658 shall also apply.
14. Improvement plans for the diversion channel retention basin with its outflow devices prepared by a registered Civil Engineer and approved by the City Engineer shall be required prior to issuance of building and grading permits.
15. A maintenance agreement and bonds for the retention basin, executed by the owner of the property on which the basin is to be constructed, shall be required prior to issuance of building permits.

APPROVED AND ADOPTED THIS 24TH DAY OF MARCH, 1982.

PLANNING COMMISSION OF THE CITY OF RANCHO CUCAMONGA

BY: _____
Jeffrey King, Chairman

ATTEST: _____
Secretary of the Planning Commission

I, JACK LAM, Secretary of the Planning Commission of the City of Rancho Cucamonga, do hereby certify that the foregoing Resolution was duly and regularly introduced, passed, and adopted by the Planning Commission of the City of Rancho Cucamonga, at a regular meeting of the Planning Commission held on the 24th day of March, 1982, by the following vote-to-wit:

AYES: COMMISSIONERS:

NOES: COMMISSIONERS:

ABSENT: COMMISSIONERS:

7 128 0094

DEPARTMENT OF COMMUNITY DEVELOPMENT

STANDARD CONDITIONS

Subject: CUP 82-01

Applicant: West Coast Liquidators

Location: N/S 4th, W/O Etiwanda

Those items checked are conditions of approval.

APPLICANT SHALL CONTACT THE PLANNING DIVISION FOR COMPLIANCE WITH THE FOLLOWING CONDITIONS:

A. Site Development

- ☒ 1. Site shall be developed in accordance with the approved site plans on file in the Planning Division and the conditions contained herein.
- ☒ 2. Revised site plans and building elevations incorporating all conditions of approval shall be submitted to the Planning Division prior to issuance of building permits.
- ☒ 3. Approval of this request shall not waive compliance with all sections of the Zoning Ordinance and all other applicable City Ordinances in effect at time of Building Permit Issuance.
- ☐ 4. The developer shall provide all lots with adequate sideyard area for Recreation Vehicle storage pursuant to City standards.
- ☒ 5. Trash receptacle areas shall be enclosed by a 6 foot high masonry wall with view obstructing gates pursuant to City standards. Location shall be subject to approval by the Planning Division.
- ☐ 6. A sample of the roof material shall be submitted to the Planning Division for review and approval prior to issuance of building permits.
- ☒ 7. All roof appurtenances, including air conditioners, shall be architecturally integrated, shielded from view and the sound buffered from adjacent properties and streets as required by the Planning and Building Divisions.
- ☒ 8. Prior to any use of the project site or business activity being commenced thereon, all conditions of approval contained herein shall be completed to the satisfaction of the Director of Community Development.
- ☐ 9. This approval shall become null and void if building permits are not issued for this project within one year from the date of project approval.
- ☒ 10. As a Conditional Use Permit, this project shall become null and void in eighteen (18) months from date of approval, unless permits are issued or use approved is completed.
- ☒ 11. A detailed lighting plan shall be submitted to and approved by the Planning Division prior to issuance of building permits. Such plan shall indicate style, illumination, location, height and method of shielding. No lighting shall adversely affect adjacent properties.
- ☐ 12. All swimming pools installed at the time of initial development shall be solar heated.
- ☐ 13. Texturized pedestrian pathways across circulation aisles shall be provided throughout the development to connect dwellings with open spaces and recreational use.

Project

- ☐ 14. All trash pick up shall be for individual units with all receptacles shielded from public view, if no centralized trash receptacles are provided.
- ☐ 15. Standard patio cover plans shall be submitted to and approved by the City Planner and Building Official prior to occupancy of the first unit.
- ☐ 16. All building's numbers and individual units shall be identified in a clear and concise manner, including proper illumination.
- ☐ 17. Solid core exterior doors, security dead bolts and locks shall be installed on each unit in this project.
- ☐ 18. Security devices such as window locks shall be installed on each unit.
- ☐ 19. All units within this development shall be preplumbed to be adapted for a solar water heating unit.
- ☐ 20. Energy conserving building materials and appliances are required to be incorporated into this project to include such things as but not limited to reduced consumption shower heads, better grade of insulation, double paned windows, extended overhangs, pilotless appliances, etc.
- ☐ 21. This development shall provide an option to hose buyers to purchase a solar water heating unit.
- ☐ 22. Emergency secondary access shall be provided to this tract to the satisfaction of the Fire Protection District.
- ☐ 23. Local and Master Planned Equestrian Trails shall be provided throughout the tract in accordance with the Equestrian Trail Plan. A detailed equestrian trail plan indicating widths, maximum slopes, physical conditions, fencing and weed control, in accordance with City equestrian trail standards, shall be submitted to and approved by the City Planner prior to approval and recordation of the final map.
- ☐ 24. This tract shall form or annex to a maintenance district for maintenance of equestrian trails.
- ☐ 25. Street names shall be reviewed and approved by the City Planner, in accordance with the adopted Street Naming Policy, prior to approval and recordation of the final map.
- ☐ 26. If this development intends to restrict equestrian or animal related uses to specific lots or prohibit them entirely, then a copy of the C.C. & R.'s must be submitted to and reviewed by the City Planner prior to approval of final map.
- ☐ 27. This project shall provide _____ percent of affordable housing and/or rents, in conformance with General Plan Housing Policies and the Housing Criteria defined in the Growth Management Ordinance. Affordability shall be determined by current market rates, rents and median income levels at the time of construction of the project. An agreement to such shall be approved by the City Planner prior to issuance of building permits.

B. Parking & Vehicular Access

- ☒ 1. All parking lot landscaped islands shall have a minimum outside dimension of 5' and shall contain an 18" walk adjacent to parking stall.
- ☐ 2. Parking lot trees shall be a minimum 15 gallon size.

- ☒ 3. All two-way aisle widths shall be a minimum of 26 feet wide.
- ☒ 4. Emergency access shall be provided, maintenance free and clear, a minimum of 24 feet wide at all times during construction in accordance with Footfall Fire District requirements.
- ☒ 5. All parking spaces shall be double striped.
- ☐ 6. All units shall be provided with automatic garage door openers.
- ☐ 7. Designated visitor parking areas shall be turf blocked.
- ☐ 8. The Covenants, Codes and Restrictions shall restrict the storage of recreational vehicles on this site unless they are the principle source of transportation for the owner.
- ☐ 9. No parking shall be permitted within the interior circulation aisle other than in designated visitor parking areas. Covenants, Codes, and Restrictions Division prior to issuance of building permits.

C. Landscaping

- ☒ 1. A detailed landscape and irrigation plan shall be submitted to and approved by the Planning Division prior to the issuance of building permits.
- ☐ 2. Existing trees shall be retained wherever possible. A master plan of existing trees showing their precise location, size and type shall be completed by the developer. Said plan shall take into account the proposed grading, what trees are to be retained, trimming methods, and where new trees will be planted for replacement of removed trees. The plan is required to be submitted to and approved by the Planning Division prior to approval of the final grading plan.
- ☒ 3. Street trees, a minimum of 15 gallon size or larger, shall be installed in accordance with the Master Plan of street trees for the City of Rancho Cucamonga and shall be planted at an average of every 30' on interior streets and 20' on exterior streets.
- ☐ 4. A minimum of 50 trees per gross acre, comprised of the following sizes, shall be provided within the development; 20"-24" box or larger, 70%-15 gallon, and 10%-5 gallon.
- ☒ 5. All landscaped areas shall be maintained in a healthy and thriving condition, free from weeds, trash, and debris.
- ☒ 6. All slope banks in excess of five (5) feet in vertical height and of 5:1 or greater slope shall be landscaped and irrigated in accordance with slope planting requirements of the City of Rancho Cucamonga. Such slope planting shall include but not be limited to rooted ground cover and appropriate shrubs and trees. All such planting and irrigation shall be continuously maintained in a healthy and thriving condition by the developer until each individual unit is sold and occupied by the buyer. Prior to releasing occupancy for these units, an inspection of the slopes shall be completed by the Planning Staff to determine that it is in satisfactory condition.
- ☐ 7. All pathways, open areas, and landscaping shall be fully maintained by a homeowners association or other means acceptable to the City. Such proof of maintenance shall be submitted to the City prior to issuance of building permits.
- ☐ 8. The front yard landscaping, and an appropriate irrigation system shall be installed by the developer in accordance with submitted plans.

- ☒ 9. The final design of the perimeter parkways, walls, landscaping and sidewalks shall be included in the required landscape plans and shall be subject to approval by the Planning Division.

- ☐ 10. A minimum of 3 of the trees planted within the project, shall be specimen size trees.

- ☒ 11. Special landscape features such as bounding, alluvial rock, specimen size trees, meandering sidewalks (both vertical and horizontal change) and intensified landscaping, is required along 4th Street.

D. Signs

- ☒ 1. Any signs proposed for this development shall be designed in conformance with the Comprehensive Sign Ordinance and shall require review and approval by the Planning Division prior to installation of such signs.

- ☐ 2. A uniform sign program for this development shall be submitted to the Planning Division for their review and approval prior to issuance of Building permits.

- ☒ 3. The signs indicated on the submitted plans are not approved with this approval and will require separate sign review and approval.

E. Additional Approvals Required

- ☐ 1. Development Review shall be accomplished prior to the issuance of a Building Permit.

- ☐ 2. Development Review shall be accomplished prior to recordation of the final subdivision map.

- ☐ 3. Approval of Tentative Tract No. is granted subject to the approval of

- ☐ 4. This Conditional Use Permit is granted for a period of month(s) at which time the Planning Commission may add or delete conditions or revoke the Conditional Use Permit.

- ☐ 5. The developer is required to obtain the following signed statement by purchasers of homes which have a private or public equestrian trail on or adjacent to their property.

In purchasing the home located on Lot , Tract on , I understand that said lot is subject to a mutual reciprocal easement for the purpose of allowing equestrian traffic to gain access.

Signed Purchaser

Said statement is to be filed by the developer with the City prior to occupancy.

- ☐ 6. Prior to approval and recordation of the final map, or prior to issuance of building permits, when no subdivision map is involved, written certification from all affected School Districts, shall be submitted to the Department of Community Development which states that adequate school facilities are or will be capable of accommodating students generated by this project. Such letter of certification must have been issued by the School District within sixty (60) days prior to the final map approval in the case of the subdivision map or issuance of permits in the case of all other residential projects.

7. to approval and recordation of the final map, or prior to the issuance of building permits when no map is involved, written certification from the affected water district, that adequate sewer and water facilities are or will be available to serve the proposed project, shall be submitted to the Department of Community Development. Such letter must have been issued by the water district within sixty (60) days prior to final map approval in the case of subdivision or issuance of permits in the case of all other residential projects. For projects using septic tank facilities allowable by the Santa Ana Regional Water Control Board and the City, written certification of acceptability, including all supportive information, shall be obtained and submitted to the City.

8. This approval shall become null and void if the tentative subdivision map is not approved and recorded or building permits issued when no map is involved, within twelve (12) months from the approval of this project unless an extension has been granted by the Planning Commission.

9. This subdivision was not submitted as a total development package and is required to reapply for a point rating relative to the design section of the Growth Management Ordinance prior to final approval and recordation of the map if the subdivision is going to be developed as tract homes.

APPLICANT SHALL CONTACT THE BUILDING DIVISION FOR COMPLIANCE WITH THE FOLLOWING CONDITIONS:

F. Site Development

X 1. The applicant shall comply with the latest adopted Uniform Building Code, Uniform Mechanical Code, Uniform Plumbing Code, National Electric Code, and all other applicable codes and ordinances in effect at the time of issuance of relative permits.

X 2. Prior to issuance of building permits for combustible construction, evidence shall be submitted to the Foothill District Fire Chief that temporary water supply for fire protection is available, pending completion of required fire protection systems.

3. Prior to the issuance of a building permit for a new residential dwelling unit(s) or major addition to an existing unit(s), the applicant shall pay development fees at the established rate. Such fees may include, but not be limited to: City Beautification Fee, Park Fee, Drainage Fee, Systems Development Fee, Permit and Plan Checking Fees, and School Fees.

X 4. Prior to the issuance of a building permit for a new commercial or industrial development or addition to an existing development, the applicant shall pay development fees at the established rate. Such fees may include, but not be limited to: Systems Development Fee, Drainage Fee, Permit and Plan Checking Fees.

X 5. Street addresses shall be provided by the building official.

6. Dwelling units shall be constructed with fire retardant material and non-combustible roof material.

7. All corner dwellings shall have the building elevation facing the street upgraded with additional wood trim around windows and wood siding or plant-ings where appropriate.

G. Existing Structures

1. Provide compliance with the Uniform Building Code for property line clearances considering use, area and fire-resistiveness of existing buildings.

2. Existing building(s) shall be made to comply with current Building and Zoning regulations for the intended use or the building shall be demolished.

3. Existing sewage disposal facilities shall be removed, filled and/or capped to comply with the Uniform Plumbing Code, and Uniform Building Code.

H. Grading

X 1. Grading of the subject property shall be in accordance with the Uniform Building Code, City Grading Standards and accepted grading practices. The final grading plan shall be in substantial conformance with the approved conceptual grading plan.

X 2. A soils report shall be prepared by a qualified engineer licensed by the State of California to perform such work.

3. A geological report shall be prepared by a qualified engineer or geologist and submitted at the time of application for grading plan check.

X 4. The final grading plan shall be subject to review and approval by the Grading Committee and shall be completed prior to recordation of the final subdivision map or issuance of building permit whichever comes first.

5. As a custom-lot subdivision, the following requirements shall be met:

a. Surety shall be posted and an agreement executed, guaranteeing completion of all on-site drainage facilities necessary for dewatering all parcels, to the satisfaction of the Building and Safety Division.

b. Appropriate easements, for safe disposal of drainage water that are conducted onto or over adjacent parcels, are to be delineated and recorded to the satisfaction of the Building and Safety Division.

c. On-site drainage improvements, necessary for dewatering or protecting the subdivided properties, are to be installed prior to issuance of building permits for construction upon any parcel that may be subject to, or contribute to, drainage flows entering, leaving or within a parcel relative to which a building permit is requested.

d. Final grading plans for each parcel are to be submitted to the Building and Safety Division for approval prior to issuance of building permits. (This may be on an incremental or composite basis.)

e. All slope banks in excess of five (5) feet in vertical height and of 5:1 or greater slope shall be seeded with native grasses upon completion of grading or some other alternative method of erosion control shall be completed to the satisfaction of the Building Official. Irrigation shall be provided to germinate the seed and maintain growth to a point 6 months after germination.

APPLICANT SHALL CONTACT THE ENGINEERING DIVISION FOR COMPLIANCE WITH THE FOLLOWING CONDITIONS:

1. Dedications and Vehicular Access

1. Dedications shall be made by final map of all interior street rights-of-way and all necessary easements as shown on the tentative map.

X 2. Dedication shall be made of the following rights-of-way on the following streets:

40 XXXXXX feet on 7th Street
additional feet on
additional feet on

3. Corner property line radius will be required per City standards.

4. All rights of vehicular ingress to and egress from shall be dedicated as follows:

5. Reciprocal easements shall be provided ensuring access to all parcels over private roads, drives, or parking areas, and shall be noticed on the map or shall be recorded concurrent with the map.

- X 6. Adequate provisions shall be made for the ingress, egress and internal circulation of any trucks which will be used for delivery of goods to the property or in the operation of the proposed business.
- 7. Private drainage easements for cross-lot drainage shall be required and shall be delineated or noticed on the final map.
- 8. All existing easements lying within future right-of-way are to be relinquished or to be delineated on the map per City Engineer's requirements.
- X 9. Easements for sidewalk for public uses shall be dedicated to the City where sidewalks meander through private property.

J. Street Improvements

- 1. Construct full street improvements including, but not limited to, curb and gutter, A.C. pavement, sidewalk, drive approaches, parkway trees and street lights on all interior streets.
- X 2. A minimum of 26-foot wide pavement within a 40-foot wide dedicated right-of-way shall be constructed for all half-section streets.
- X 3. Construct the following missing improvements including, but not limited to:

| STREET NAME | CURB & GUTTER | A.C. PAVT. | SIDW. WALK | DRIVE APPR. | STREET LIGHTS | A.C. OVERLAY | PEDESTRIAN ISLAND | OTHER |
|-------------|---------------|------------|------------|-------------|---------------|--------------|-------------------|-------|
| 4th St. | | | meand. | X | X | | lien | |
| 7th St. | X | X | | X | X | | | |
| | | | | | | | | |
| | | | | | | | | |

*includes landscaping and irrigation on motor.

- X 4. Prior to any work being performed in the public right-of-way, fees shall be paid and an encroachment permit shall be obtained from the City Engineer's Office, in addition to any other permits required.
- X 5. Street improvement plans approved by the City Engineer and prepared by a Registered Civil Engineer shall be required, for all street improvements, prior to issuance of an encroachment permit. Final plans and profiles shall show the location of all existing utility facilities within the right-of-way.
- X 6. Surety shall be posted and an agreement executed to the satisfaction of the City Engineer and the City Attorney, guaranteeing completion of the public improvements, prior to recording of the map or the issuance of building permits, whichever comes first.
- X 7. All street improvements shall be installed to the satisfaction of the City Engineer, prior to occupancy.
- X 8. Pavement striping, marking, traffic and street name signing shall be installed per the requirements of the City Engineer.
- 9. Existing city road requiring reconstruction shall remain open for traffic at all times with adequate detours during construction. A cash deposit shall be required to cover the cost of grading and paving, which shall be refunded on completion of the construction to the satisfaction of the City Engineer.

- X 10. Walkways shall be provided between public sidewalks and on-site pedestrian areas.
- X 11. Concentrated drainage flows shall not cross sidewalks. Under sidewalk drains shall be installed to city standards.
- 12. An energy dissipator and/or erosion control measures shall be installed to the satisfaction of the City Engineer, at the end of Stub Streets. A letter of acceptance of drainage runoff from the downstream property owners shall be required.

K. Drainage and Flood Control

- X 1. The applicant will be responsible for construction of all on-site drainage facilities required by the City Engineer.
- 2. Intersection drains will be required at the following locations:
- 3. The proposed project falls within areas indicated as subject to flooding under the National Flood Insurance Program and is subject to the provisions of that program and City Ordinance No. 24.
- 4. A drainage channel and/or flood protection wall will be required to protect the structures by diverting sheet runoff to streets, or to a storm drain.
- X 5. Adequate provisions shall be made for acceptance and disposal of surface drainage entering the property from adjacent areas.
- 6. Letter of acceptance from downstream property owners shall be required where runoff from the tract flows onto private properties.
- 7. shall be designed as major water carrying street requiring a combination of special curb heights, commercial type drive approaches, rolled street connections, flood protection walls, and/or landscaped earth berms and rolled driveways at property line.
- X 8. The following storm drain shall be installed to the satisfaction of the City Engineer:

On-site retention basin including related drainage structures

- X 9. Prior to recordation of the map, a broad-scale hydrologic and drainage study for the project shall be submitted to the City Engineer for review.

L. Utilities

- X 1. Provide all utility services to each lot including sanitary sewers, water, electric power, gas, telephone.
- X 2. All utilities within the project shall be installed underground including utilities along major arterials less than 12 ft.
- X 3. Utility easements shall be provided to the specification of the serving utility companies and the City Engineer.
- X 4. Developer shall be responsible for the relocation of existing public utilities, as required.
- X 5. Developer shall be responsible for the installation of street lighting in accordance with Southern California Edison Company and City standards.

X 6. ~~Drainage~~ and sewer plans shall be designed and constructed to meet requirements of the Cucamonga County Water District (CCWD), Foothill Fire District and the Environmental Health Department of the County of San Bernardino. A letter of compliance from CCWD will be required prior to recordation.

X 7. Approvals have not been secured from all utilities and other interested agencies involved. Approval of the final map will be subject to any requirements that may be received from them.

M. General Requirements and Approvals

X 1. Permits from other agencies will be required as follows:

- A. Caltrans for:
X B. County Post Abatement (required prior to issuance of a grading permit)
 C. San Bernardino County Flood Control District
 D. Other: _____

2. A copy of the Covenants, Conditions and Restrictions (C.C. & R.'s) and Articles of Incorporation of the Homeowners Association, subject to the approval of the City Attorney, shall be recorded with this map and a copy provided to the City.

3. Final parcel and tract maps shall conform to City standards and procedures.

4. A parcel map shall be recorded prior to first phase subdivision to prevent creation of unrecognized parcels.

5. Prior to recordation, a Notice of Intention to form an, or join Landscape and Lighting Districts shall be filed with the City Council. The engineering costs involved in District formation shall be borne by the developer.

6. All perimeter landscaped pathways are required to be annexed into the landscape maintenance district.

7. Landscaping and irrigation systems required to be installed on public right-of-way on the perimeter of this tract area shall be continuously maintained by the developer until accepted by the City and annexed into the landscape maintenance district.

ATTACHMENT C
TECHNCAL EXPERT RESPONSES TO COMMENTS

June 24, 2021

Ms. Tina Andersen
T&B Planning, Inc.
3200 El Camino Real, Suite 100
Irvine, CA 92602

SUBJECT: NOISE RESPONSE TO COMMENTS ON THE BRIDGE POINT RANCHO CUCAMONGA DEIR

Dear Ms. Tina Andersen:

Urban Crossroads, Inc. is pleased to submit this Noise Response to Comments for the Bridge Point Rancho Cucamonga DEIR (Project), which is located north of 4th Street and west of Etiwanda Avenue at 12322 and 12434 4th Street in the City of Rancho Cucamonga. This letter has been prepared in response to the June 21, 2021, comments prepared by Adams Broadwell Joseph & Cardozo on the Project Noise Impact Analysis report prepared by Urban Crossroads, Inc.

NOISE COMMENT-1 (PAGE 30-31)

Construction reference noise levels are used to estimate the noise generated by these activities and the equipment. The DEIR, without providing justification, relies on two different sources for reference noise levels depending on the construction activity. One source is the Federal Highway Administration ("FHWA")'s Roadway Construction Noise Model ("RCNM"), which includes a national database of construction equipment reference noise emission levels. Noise expert Derek Watry explains that the construction noise reference levels contained in the RCNM (along with those published by the Federal Transit Administration which are generally higher) are *de facto* national standards for construction noise analyses. The other source the DEIR uses is reference noise level measurements taken by the DEIR preparers, Urban Crossroads, Inc. Mr. Watry compared the Urban Crossroads reference noise levels to the RCNM levels and found that they are markedly lower.

RESPONSE TO NOISE COMMENT-1

Urban Crossroads prepared the Bridge Point Rancho Cucamonga Noise Impact Analysis (Noise Impact Analysis) included in Appendix K1 of the Draft EIR, and summarized in Section 4.11, Noise. Urban Crossroads' experience demonstrates that the RCNM model significantly overstates the predicted construction noise levels for typical construction noise source activities. Although the model was first published in 2006, the typical noise levels in the RCNM are based on the heavy construction equipment data collected from the Central Artery/Tunnel (CA/T) project in Boston, Massachusetts in the early 1990's. While the RCNM may be the *de facto* national standard for major infrastructure and/or highway construction projects, they do not accurately represent the noise source activities associated with the planned construction of Bridge Point industrial warehouse uses. The reference noise levels used in the RCNM are now over thirty years old. Over this time, equipment manufacturers have gone to great

lengths to make their equipment quieter and new equipment is generally much quieter than old equipment. In addition, the CA/T reference construction noise levels were collected to describe the 24-hour construction of the 7.5 linear mile project with hundreds of pieces of equipment operating at any time. This includes a combination of equipment types such as cranes, slurry trenching machines, hydromills, hoe rams, pile drivers, jackhammers, dump trucks, concrete pumps and trucks, backhoes, loaders, excavators, vacuum trucks, concrete and chain saws, and gas and pneumatically powered hand tools. (1 p. 157) The 12-year long CA/T project involved major excavation, and concrete placement with thousands of residential and commercial receivers in some cases as close as 10 feet away. (1 p. 165)

Public concerns about construction noise and vibration increase considerably with lengthy periods of heavy construction on major projects as well as prevalence of nighttime construction (often scheduled to avoid disrupting workday road and rail traffic). Noise and vibration complaints typically arise from interference with people's activities, especially when the adjacent community has no clear understanding of the extent or duration of the construction. (2 p. 172)

Construction activities of the Bridge Point warehouse represents the short-term daytime construction of a warehouse Project within an existing industrial area on a flat site with no major excavation or nearby residential communities. In addition, due to substantial changes in the air quality emission requirements in the State of California Air Resources Board (CARB), the RCNM reference noise level measurements do not adequately describe modern construction equipment noise levels. Starting 2014, CARB adopted regulations aimed at cleaning up off-road construction equipment. These requirements impose limits on idling, requires all vehicles to be reported to CARB and restricts the use of older vehicles. (3) This regulatory oversight ensures the that only newer and quieter construction equipment is operating in compliance with manufactured specifications.

In addition, the RCNM methodology places all construction equipment at a single point near the property line. This scenario simply does not happen in the real world as typical construction activity represents a variety of equipment operating at different locations throughout the project site. Therefore, to estimate the Project's typical construction-related noise levels, sample reference noise level measurements of similar modern construction activities were collected by Urban Crossroads, Inc. to describe the different stages of construction. A total of sixteen different construction reference noise level measurements were collected by Urban Crossroads, Inc. at four separate construction sites. This includes several noise level measurements of modern industrial/warehousing construction grading and concrete pouring equipment.

The reference noise levels are intended to represent typical construction noise levels when multiple pieces of equipment are operating simultaneously at the construction site. In addition, the construction noise analysis does not rely on any one reference noise level to fully describe the potential impacts. Rather, a combination of individual construction noise level measurements is used to describe typical activities for each stage of construction.

Consistent with City of Rancho Cucamonga Development Code Section 17.66.050[D][4], the construction noise analysis was developed to satisfy an exterior noise level standard of 65 and 70 dBA L_{eq} . Since the City of Rancho Cucamonga does not identify any maximum construction noise level criteria, the noise analysis does not consider the L_{max} construction noise levels. Local noise ordinances that...specify limits in terms of maximum noise levels...are generally not practical for assessing the impact of a construction project. (2 p. 172)

The construction activities will occur throughout the day at varying degrees of intensity and at different locations on the Project site. Therefore, the use of the identified reference noise levels for the Project's construction analysis is appropriate and no changes to the analysis presented in the Draft EIR is required.

NOISE COMMENT-2 (PAGE 31-32)

The DEIR used the lower Urban Crossroads reference noise levels for the "typical" construction noise analysis, and the higher RCNM levels for the concrete crushing analysis. The DEIR provides no rationale, reason, or explanation as to why the lower self-reported level were used for the typical construction noise analysis whereas the higher RCNM levels were used for the concrete crushing analysis. The DEIR's reliance on lower noise levels for some construction activities, and higher noise levels for other construction activities is therefore unsupported and potentially arbitrary. Mr. Watry opines that one explanation could be that, by using the lower self-reported reference levels, the DEIR was able to conclude that typical construction noise levels will comply with the applicable standard by use of a 6-foot sound barrier wall, whereas higher noise levels will require greater mitigation.

This approach violates CEQA, which requires a good faith effort at full disclosure. Since the City espouses use of RCNM noise reference levels, principles of full disclosure demand that the City disclose that mitigated typical construction noise levels would not comply with the applicable standard when RCNM levels are used. Full disclosure also requires the City to disclose its rationale for inconsistently applying the industry standard RCNM levels. Therefore, the DEIR fails as an informational document.

RESPONSE TO NOISE COMMENT-2

Since we do not have an independent noise reference noise level measurement of the concrete crushing activity, the Noise Impact Analysis relied on the published RCNM reference noise levels to describe the concrete crushing activity. It is expected that using modern construction equipment, the actual noise concrete crushing activity will be lower than what is considered in the DEIR. Further, the City does not espouse the use of RCNM, since there is no mention of the RCNM in the General Plan Public Health and Safety Element, the General Plan EIR, or the Development Code. Therefore, the construction noise source levels representing a combination of reference noise levels collected by Urban Crossroads, Inc. and the concrete crushing noise levels found in the RCNM were fully considered and disclosed in the Noise Impact Analysis as summarized in the Draft EIR. The comments provide no evidence that additional temporary construction noise mitigation is required. The construction noise analysis is consistent with the City Development Code Section 17.66.050[D][4][a], and adjacent receivers were

conservatively placed at the property line. The receivers adjacent to the north, south, west all represent non-noise sensitive industrial land uses. Only the West Valley Detention Center located adjacent to and 364 feet from the eastern property line are conservatively considered as sensitive receptors for the purposes of this analysis. Although the West Valley Detention Center is a temporary holding facility, there are beds at this facility for temporary stays. However, it is highly unlikely that receivers (inmates, staff, etc.) will be occupying the areas abutting the property lines.

The Draft EIR fully discloses the typical construction noise levels by identifying a *potentially significant* unmitigated noise impacts due to project construction activities at the eastern property line. To reduce the construction noise levels at the property line of the West Valley Detention Center the Draft EIR requires a 6-foot-high temporary noise barrier for the Detention Center and provides short-term construction noise mitigation at the property line for potentially sensitive receivers at the West Valley Detention Center. The Draft EIR adequately addresses potentially significant construction-related noise impacts and identifies feasible mitigation to reduce the impact to a less than significant impact. No additional mitigation is required, and no changes to the analysis presented in the Draft EIR is required.

NOISE COMMENT-3 (PAGE 32)

Mr. Watry reran the noise impact analysis, using the RCNM noise reference levels for the construction activities for which the DEIR inexplicably used the Urban Crossroads levels. Mr. Watry concluded that noise levels exceed the adopted standard in all directions for the Project's Demolition and Grading phases and also to the West for the Paving and Building phases.

RESPONSE TO NOISE COMMENT-3

As identified in Responses to Noise Comments-2 and Noise Comments-3 above, the City does not rely on the use of RCNM construction noise levels to fully disclose the potential noise level impacts, and the use of reference noise levels identified by Urban Crossroads in the Noise Impact Analysis included in the Draft EIR is appropriate. In addition, this comment fails to recognize that the proposed Project is located within an industrial area with no nearby noise sensitive residential land uses. The individuals temporarily held at the West Valley Detention Center located 364 feet east of the Project site boundary are conservatively considered the nearest sensitive receiver. However, consistent Development Code Section 17.66.050[D][4][a], the construction noise analysis places the adjacent receivers were placed at the property line. This conservatively overstates the Project construction noise levels because the noise experienced by individuals temporarily held at the West Valley Detention Center are estimated at 59.8 dBA L_{eq} with the planned 6-foot-high temporary construction noise barrier and would be approximately 2.3 dBA L_{eq} lower than what is disclosed in the Draft EIR. The Draft EIR adequately addresses potentially significant construction-related noise impacts and identifies feasible mitigation to reduce the impact to a less than significant impact. No additional mitigation is required, and no changes to the analysis presented in the Draft EIR is required.

Ms. Tina Andersen
T&B Planning, Inc.
June 24, 2021
Page 5 of 5

Respectfully submitted,

URBAN CROSSROADS, INC.



Bill Lawson, P.E., INCE
Principal

REFERENCES

1. *Construction noise control program and mitigation strategy at the Central Artery/Tunnel Project.* **Thalheimer, Erich.** 5, s.l. : Noise Control Engineering, 2000, Vol. 48.
2. **U.S. Department of Transportation, Federal Transit Administration.** *Transit Noise and Vibration Impact Assessment.* September 2018.
3. **California Air Resources Board.** In-Use Off Road Diesel-Fueled Fleets Regulation Overview, Revised October 2016. [Online] 06 29, 2021.
https://ww2.arb.ca.gov/sites/default/files/classic/msprog/ordiesel/faq/overview_fact_sheet_dec_2010-final.pdf.

July 7, 2021

Ms. Tina Andersen
T&B Planning, Inc.
3200 El Camino Real, Suite 100
Irvine, CA 92602

**SUBJECT: BRIDGE POINT RANCHO CUCAMONGA HIGH-CUBE FULFILLMENT CENTER
 RESPONSE TO COMMENTS**

Dear Ms. Tina Andersen:

This letter presents our response to environmental comments raised by Adams Broadwell Joseph & Cardozo (Adams Broadwell) and Smith Engineering & Management following their review of the Draft Environmental Impact Report (EIR) for the Bridge Point Rancho Cucamonga Project located north of 4th Street, south of 6th Street, and west of Etiwanda Avenue in the City of Rancho Cucamonga. The Draft EIR included a copy of Urban Crossroads' *Bridge Point Rancho Cucamonga Vehicle Miles Traveled (VMT) Analysis* dated March 23, 2021, and *Bridge Point Rancho Cucamonga High-Cube Fulfillment Center Traffic Memo* dated April 15, 2021.

THRESHOLDS

As noted by the commenter, the City adopted VMT significance thresholds for determining the significance of transportation impacts under CEQA. The City Council adopted these thresholds via Resolution 2020-056 on June 17, 2020. The thresholds were developed after a public review process consisting of a joint coordination between the San Bernardino County Transportation Authority and its member agencies. The guidelines were developed by an expert traffic consulting firm (Fehr & Peers) and are based on substantial evidence.

The City Council staff report related to resolution 2020-056 is available online here: <https://rcdocs.cityofrc.us/WebLink/DocView.aspx?id=568102&dbid=0&repo=RanchoCucamonga> and provides substantial evidence to support the City's adoption of its VMT threshold. The City specifically noted that "The OPR recommended threshold of 15% below existing average VMT does not illustrate a connection to the other SB 743 objectives related to statewide goals to promote public health through active transportation, infill development, multimodal transportation networks, and a diversity of land uses. Recommending a reduction below baseline levels is consistent with these objectives, but the numerical value has not been tied to specific statewide values for each objective or goal. Reductions below the existing baseline is the usual way of analyzing environmental impacts under CEQA."

The City also noted that “The intent of SB 743 is to promote infill development and reduce GHGs by promoting development in VMT- efficient areas (i.e., Cities that have VMT per service population below the County average). As identified above, the City of Rancho Cucamonga land uses are currently more efficient on average from a VMT per service population perspective than the average of the County of San Bernardino as a whole, therefore comparisons to the City average are more in line with the legislative intent of SB 743.”

The City has discretion to adopt its own thresholds of significance and the commenter is wrong to allege that the City must adopt OPR’s recommended threshold of 85 percent of average. See Technical Advisory on Evaluating Transportation Impacts in CEQA for (Available online here: http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf). First, the introduction to the OPR Technical Advisory explicitly states that “[t]he purpose of this document is to provide advice and recommendations, which agencies and other entities may use at their discretion. This document does not alter lead agency discretion in preparing environmental documents subject to CEQA.”

Second, the OPR Technical Advisory recommends the use of screening thresholds that are consistent with those adopted by the City here. The City Guideline’s “Low VMT Area Screening” is consistent with the OPR Technical Advisory’s “Map-Based Screening for Residential and Office Projects.” As stated in the OPR Technical Advisory, “...projects that locate in areas with low VMT, and that incorporate similar features (i.e., density, mix of uses, transit accessibility), will tend to exhibit similarly low VMT” (OPR Technical Advisory pg. 12). The Project here is consistent with the underlying land use and does not propose to change other factors that would prohibit the use of map based screening.

Finally, the OPR Technical Advisory recommends its 85 percent of average threshold for residential, office, and mixed-use projects. But for “other project types” OPR notes that “Lead agencies, using more location-specific information, may develop their own more specific thresholds, which may include other land use types. In developing thresholds for **other project types, or thresholds different from those recommended here**, lead agencies should consider the purposes described in section 21099 of the Public Resources Code and regulations in the CEQA Guidelines on the development of thresholds of significance (e.g., CEQA Guidelines, § 15064.7).” Page 17 (Emphasis added).

The Project here is an industrial warehouse project and OPR has not recommended or adopted any particular threshold that applies to this Project. Therefore, the City’s threshold (impacts are significant if the baseline project generated VMT per service population exceeds the City) as applied to this Project are entirely consistent with OPR’s Technical Advisory.

VEHICLE MILES TRAVELED

The City Guidelines state that a low VMT area is defined as an individual traffic analysis zone (TAZ) where total daily Origin/Destination (O/D) VMT per service population is lower than the City average total daily O/D VMT per service population. (City Guidelines pg. 19-20) This test was performed, and it was disclosed in the analysis that the project did not meet this test. However, City Guidelines also states

elsewhere that “it may be appropriate to extract the project generated VMT using the production-attraction (P/A) trip matrix instead of the O/D trip matrix... when a project is entirely composed of retail or employment type uses and there is a need to isolate commute VMT (City Guidelines page 23). The Guidelines also state “The City should evaluate the appropriate methodology based on the project land use types and context.” (City Guidelines page 23). In this case, VMT for this project is entirely composed of retail and employment uses and the City appropriately evaluated the VMT per service population based on the P/A trip matrix as well, which resulted in the project residing in a low VMT area. As stated in the OPR Technical Advisory, “...projects that locate in areas with low VMT, and that incorporate similar features (i.e., density, mix of uses, transit accessibility), will tend to exhibit similarly low VMT” (OPR Technical Advisory pg. 12). The Project here is consistent with the underlying land use and does not propose to change other factors that would prohibit the use of map-based screening. This methodology is appropriate for the project land use type (industrial warehouse) based on their adopted VMT analysis guidelines and impact thresholds.

The City Guidelines also state that “for low VMT screening to be satisfied, the analyst must verify that the project land uses would not alter the existing built environment in such a way as to increase the rate or length of vehicle trips (e.g., the proposed project is consistent with existing land use in the area, the project would be expected to contribute VMT consistent with existing land use in the area, and the project would not significantly alter travel patterns in the area).” Consistent with the Guidelines and for disclosure purposes, a full VMT analysis was also conducted for the project based on the City’s adopted guidance to use the P/A trip matrix for single land use projects. The analysis findings support and verify the screening conclusion that P/A based project generated VMT per service population would not exceed the City’s impact threshold or significantly alter travel patterns in the area. As explained in the VMT analysis, the project generated VMT per service population is 7.77% below than the City’s current threshold, and the cumulative project generated VMT per service population 10.34% below the City’s threshold. Therefore, the Project’s VMT impact would also be considered less than significant based on the comparison of baseline project generated VMT per service population to the City’s adopted threshold and the comparison of cumulative project generated VMT per service population to the City’s adopted threshold.

As explained in Response to Comment “Thresholds” above, the City used its discretion and adopted its own thresholds of significance, and these thresholds were not challenged. The commenter’s comparison to OPR’s recommended thresholds is therefore not applicable here and any allegation that the Project has a significant VMT impacts is baseless.

The legislative intent behind SB 743 is to reduce greenhouse gas emissions (OPR Technical Guidance, p. 1) and as shown in Draft EIR Section 4.7, Greenhouse Gas Emissions, the Project would result in less than significant GHG impacts. Moreover, in response to a generic comment letter from the California Air Resources Board (CARB), the Project Applicant has voluntarily agreed to incorporate the following additional mitigation measures that would further reduce the Project’s less than significant GHG emissions.

In an effort to conduct a conservative analysis and overstate as opposed to understate potential traffic impacts, the VMT analysis took into consideration 100% of the Project traffic and did not apply and reductions (take credit) for the existing uses on the site.

TRIP GENERATION - 1

No evidence is given as to why the reviewer disputes the commonly used method of taking credit for the existing baseline. This comment is addressed in response to comments on the Adams Broadwell letter.

Urban Crossroads employed a commonly used tool for estimating baseline vehicle trip generation utilizing a regionally and nationally recognized data source - Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition (2017). It is not uncommon to use the ITE Trip Generation Manual rates when there is limited driveway data available or if an existing use is occupied at less than full capacity as the use of the ITE rates would provide an average representation of the existing trip generation. CEQA allows for the impacts of a project to be assessed based on the incremental effects of the project taking into consideration the existing/baseline conditions. As the project site contains multiple structures that by right could be occupied and operated by both a retail and warehouse use, the decision to account for these uses as part of the baseline condition is supported by CEQA case law. In an effort to conduct a conservative analysis, the existing trip generation was estimated using ITE's High-Cube Transload and Short-Term Storage Warehouse (ITE Land Use Code 154) and Free-Standing Discount Store (ITE Land Use Code 815) land uses.

ITE Land Use Code 154 is the lowest generating land use of the various industrial-related land uses in the ITE Trip Generation Manual and ITE Land Use Code 815 is the best-fit land use when taking into consideration of the retail tenant that previously occupied the space. The daily rate for ITE Land Use Code 154 is 1.4 trips per thousand square feet as compared to the daily rate utilized for the proposed Project (1.81 trips per thousand square feet for ITE Land Use Code 155 and 2.12 trips per thousand square feet for ITE Land Use Code 157). The resulting trip generation for the existing use is intentionally understated in order to ensure the delta between the proposed Project and existing use is conservatively higher for evaluation in the applicable technical studies. It should be noted that another by-right warehouse user could occupy the space and generate more traffic than that credited for the Project. In other words, the delta in trips between the proposed Project and the existing baseline conditions is appropriate.

ITE describes High-Cube Transload and Short-Term Storage Warehouse uses to include "at least 200,000 gross square feet of floor area (with an average of 798,000 square feet), has a ceiling height of 24-feet or more, and is used primarily for the storage and/or consolidation of manufacturing goods (and to a lesser extent, raw materials) prior to their distribution to retail locations or other warehouses." These types of warehouses have a high level of automation and logistics management which allow for highly efficient processing of goods. In comparison, the ITE Land Use Code 150 for Warehousing generically indicates that these facilities are "primarily devoted to the storage of materials." The average surveyed

building size in the ITE Trip Generation Manual is 285,000 square feet for the Warehousing land use and has a daily rate of 1.74 trips per day. The High-Cube Transload and Short-Term Storage Warehouse use was utilized as it closely fit the description of the existing use relative to functionality and size and had the most conservative (lower) daily trip generation rate.

The commenter is correct that the existing traffic counts were taken when the existing buildings were vacant. However, the existing trip count data at potentially impacted intersections is only used in the analysis of congestion-based traffic impacts (i.e., LOS) that are no longer considered an impact under CEQA. To provide a conservative analysis, in the non-CEQA portion of the traffic analysis, no credit was taken for the existing trips. Existing trip counts at intersections are not used in analysis of air or GHG impacts, only the total daily trips generated by the use occupying the building.

The trip generation data is not improper and the discounting of trips as result of existing uses is entirely appropriate and allowed under the CEQA Guidelines and CEQA caselaw.

TRIP GENERATION – 2

As described in Section 3.4.3G, Operational Characteristics, of the Draft EIR (pages 3-38 and 3-39), the Project is not intended to operate a high-cube fulfillment sort-facility warehouse and the current site plan does not support this on-site use. For instance, a sort-facility operation on-site may not be feasible based on the parking accommodated as the design of the proposed Project does not adequately supply the required employee parking needed to support a sort fulfillment center use. Notwithstanding, and contrary to the commenter's assertion that the Draft EIR does not analyze the potential impacts associated with a sort fulfillment center use, to provide a conservative analysis, the City analyzed the Project as a sort fulfillment center use and a non-sort fulfillment center use. The *Bridge Point Rancho Cucamonga High-Cube Fulfillment Center Traffic Memo* (Traffic Memo) (dated April 15, 2021, and included in Appendix L2 of the Draft EIR) was prepared and included trip generation information for a sort-facility warehouse. To the commentator's point, a sort-facility has high trip generation which is largely associated with the high volume of employees required to support this type of facility. This is demonstrated in the Traffic Memo which identifies an average daily traffic (ADT) volume of 4,008 trips for a non-sort facility (4,804 PCE trips), and 13,070 ADT (13,914 PCE trips) with a sort facility (prior to consideration of trips generated by the existing buildings). This trip generation information was the basis for supplemental analyses included in the respective sections of the Draft EIR related to air quality, energy, greenhouse gas emissions, off-site traffic noise, and transportation/VMT. As identified through the supplemental analyses the Project, operated as a non-sort fulfillment center or a sort fulfillment center, would have less than significant impacts.

Ms. Tina Andersen
T&B Planning, Inc.
July 7, 2021
Page 6 of 6

If you have any questions or comments, I can be reached at (949) 861-0177.

URBAN CROSSROADS, INC.

A handwritten signature in cursive script that reads "Charlene So".

Charlene So, PE
Associate Principal



July 8, 2021

Attention: Tina Anderson

T & B Planning, Inc.

3200 El Camino Real, Suite 100

Irvine, CA 92602

SUBJECT: Response to Comments from Adams Broadwell Joseph & Cardozo Representing Californians Allied for a Responsible Economy (CARECA)

ELMT Consulting (ELMT) is pleased to provide the following response to comments from Adams Broadwell Joseph & Cardozo regarding the potential for burrowing owls to occur at the Bridge Point Project in Rancho Cucamonga.

***Comment:** The commenter asserts that the DEIR Fails to Adequately Assess Burrowing Owl Habitat.*

Response: The commenter incorrectly asserts that ELMT did not accurately assess burrowing owl habitat and potential presence of burrowing owls on the site. ELMT conducted the required assessment of potential impacts to biological resources. ELMT has extensive experience (more than 50 combined years) inventorying, assessing and mitigating, where required, potential impacts to burrowing owls.

The CDFW NOP comment letter did not state that surveys were required. Instead, the CDFW letter stated that “[t]he Project site *has the potential to provide suitable* foraging and/or nesting habitat for burrowing owl” and then said the City should follow the Staff Report on Burrowing Owl Mitigation (Department of Fish and Game, March 2012) and follow the three *progressive steps* of 1) habitat assessment; 2) surveys; and 3) an impact assessment.

As part of documenting the presence or absence of burrowing owls on a project site, the first task required by California Department of Fish and Wildlife (CDFW) guidelines is to determine if a site offers suitable habitat for the species. ELMT followed the guidance in the Staff Report on Burrowing Owl Mitigation and first assessed if the site contained suitable foraging and/or nesting habitat.

- **Habitat Assessment:** The habitat assessment was conducted on April 1, 2020. Upon arrival at the project site, and prior to initiating the assessment survey, binoculars were used to scan all habitats on and adjacent to the property, including perch locations, to establish owl presence.

All suitable areas of the project site were surveyed on foot by walking slowly and methodically while recording/mapping areas that may represent suitable owl habitat onsite. Primary indicators of suitable burrowing owl habitat include, but are not limited to, native and non-native grassland, interstitial grassland within shrub lands, shrub lands with low density shrub cover, golf courses, drainage ditches, earthen berms, unpaved airfields, pastureland, dairies, fallow fields, and

agricultural use areas. Burrowing owls typically use burrows made by fossorial mammals, but they often utilize man-made structures, such as earthen berms, cement culverts, cement, asphalt, rock, wood debris piles, openings beneath cement or asphalt pavement. Burrowing owls are often found within, under, or in close proximity to man-made structures.

In addition to surveying the entire Project Site, all bordering areas within 500 feet were assessed. If suitable habitat is documented onsite or within adjacent habitats, focused surveys are required in order to comply with the CDFW guidelines.

Concurrent with the initial habitat assessment, a detailed focused burrow survey was conducted and included documentation of appropriately sized natural burrows or suitable man-made structures that may be utilized by burrowing owl.

As documented in the Habitat Assessment for the Project, burrowing owls are generally ground dwellers and need clear line-of-sight conditions for hunting and predator avoidance. Additionally, burrowing owls usually do not dig their own nesting burrows and instead will occupy burrows created by other species such as ground squirrel. The initial site visit is used to make the assessment of onsite conditions: 1) is the vegetation open enough and low enough to allow line-of-sight opportunity for the species; and 2) are there sufficient existing burrows on the site (greater than 4 inches in diameter) that owls can inhabit. A careful assessment by Dr. Tom McGill (42 years of experience) and Travis McGill (12 years of experience) confirmed that baseline conditions did not provide suitable habitat and that no burrows provided nesting opportunities for burrowing owls. Without these key biological features present, burrowing owls can be assumed not to be present. Because the habitat assessment concluded that the Project site contains no suitable foraging and/or nesting habitat potential, focused surveys are not required [*Staff Report on Burrowing Owl Mitigation*, State of California - Natural Resources Agency, Department of Fish and Game, March 7, 2012]. The single site visit was adequate to make this determination and focused surveys are not warranted and not recommended by the Staff Report on Burrowing Owl Mitigation.

It should also be noted that the Draft EIR was transmitted to CDFW for review; no comments from CDFW were received on the Draft EIR.

The commentor also questions the qualification of the two surveying biologists to assess the site for the potential presences of burrowing owls and to make informed decisions. As identified above, Dr. McGill and Travis McGill have been conducting biological inventories of burrowing owls for over 50 years. Detailed resumes for these individuals are attached to this memo. These individuals have also worked closely with CDFW for managing populations of burrowing owls, including implementing avoidance and monitoring measures, as well as supporting passive and active relocation programs. Travis McGill has supported Jeff Kidd (Kidd Biological) one of the nation's leading burrowing owl experts, for the last ten years, doing inventories throughout the state of California, developing management plans and implementing the recommended avoidance, minimization and mitigation measures. This level of expertise is more than adequate to determine if owls will be present or not and to effectively manage any burrowing owls found within a project site. All management activities are conducted in consultation with CDFW. For this project, the habitat assessment determined that the Project site contains no suitable foraging and/or nesting habitat and burrowing owls were determined not to be present. Therefore, no further actions, including focused surveys were recommended or warranted.

Please do not hesitate to contact Tom McGill at (951) 285-6014 or tmcgill@elmtconsulting.com or Travis McGill at (909) 816-1646 or travismcgill@elmtconsulting.com should you have any questions.

Sincerely,



Thomas J. McGill, Ph.D.
Managing Director



Travis J. McGill
Director

Attachments:

A. *Resumes*



Years of Experience: 42

Education

Ph.D., 1978, Genetics, University of California at Santa Barbara

M.A., 1978, Ecology, University of California at Santa Barbara

B.A., 1971, Biology, Harvard University

Skills and Specialties

Endangered Species Permits

Mitigation Implementation

Thomas J. McGill, Ph.D.

Managing Director

Dr. McGill has experience in preparing all types of biological reports, including resource management plans, habitat conservation plans (HCP), multi-species habitat conservation plans (MSHCP), sensitive species surveys, and biological assessments under Section 7 of the federal endangered species act. He provides the unique combination of being an environmental consultant as well as an attorney having passed the California State Bar in 1990. Dr. McGill has directed numerous habitat conservation planning, land use planning, and environmental efforts throughout California. Dr. McGill is also one of the authors of the multiple award-winning first

ever Tribal Multi-Species Habitat Conservation Plan prepared for the Agua Caliente Band of Cahuilla Indians which established the benchmark for all future similar documents for Sovereign Nations. Prior to his entry into the private industry, Dr. McGill worked for the U.S. Department of the Navy as head of environmental management in the Mojave Desert at China Lake.

Project Experience

Harmony Specific Plan Highland, California. LCD Greenspot LLC (Lewis Op. Corp). Project Manager. The Harmony Specific Plan will develop a master plan residential community. LCD Greenspot, LLC in coordination with the County of Orange Flood Control District prepared a planned community specific plan for the 1,658-acre Greenspot Property located on the northern banks of the Santa Ana River in Highland, CA. Dr. McGill conducted a habitat assessment and several focused surveys for a biological technical report and biological constraints analysis for the Harmony Specific Plan. Dr. McGill developed a set of mitigation measures to address the presence of burrowing owls, sensitive plants, California gnatcatcher (*Poliophtila californica*), least Bell's vireo, southwestern willow flycatcher (*Empidonax traillii extimus*), and San Bernardino kangaroo rat (*Dipodomys merriami parvus*). Dr. McGill was an integral part of preparing and adopting an EIR for the project.

Long-term Management Plans (LTMPs) for Various Projects. Inland Empire, California. Dr. McGill prepared LTMPs in compliance with CEQA mitigation requirements for the following projects/ areas with non-listed special-status species: "The Preserve" development project in the City of Chino; Glen Helen Specific Plan area in San Bernardino County; and the P&V Development area in the Mojave Desert near Barstow. The Chino LTMP provided detailed methodology for implementing mitigation measures for the Santa Ana River and the Prado Basin that addressed burrowing owl, least Bell's vireo, southwestern willow flycatcher, Santa Ana sucker, waters of the U.S., raptor foraging habitat, migratory bird and waterfowl habitat. The Chino LTMP was awarded four AEP and APA awards in 2003 and 2004 based on the uniqueness and creativity of the approach undertaken.

Victorville Aggregates Railway Extension Project, Victorville, California. CEMEX Construction Materials Pacific, LLC. Project Manager. The project included the construction of a new railway system and associated infrastructure that would be used to transport and process aggregate material from CEMEX's Black Mountain Quarry. Dr. McGill oversaw the preparation of the Habitat Assessment, Delineation of State and Federal Jurisdictional Waters report and desert tortoise focused surveys. Dr. McGill assisted with

the design of the new railway system to avoid impacts to sensitive biological resources (i.e., desert tortoise, burrowing owl).

North Cathedral City Improvements Project, Phase 1. The Coachella Valley Water District (CVWD) proposes to re-establish a regional stormwater drain that would convey stormwater flows from north of the Union Pacific Railroad (UPRR) Bridge in a southerly direction to the Whitewater River Stormwater Channel (WWRSC). The UPRR Bridge was constructed over the project site but was backfilled pending future channel improvements downstream of the bridge as part of the build out of the North Cathedral City Stormwater Master Plan. This project provides a reliable and engineered channel under the bridge that will provide a long term solution for conveying flows downstream to the WWRSC. Dr. McGill was the lead biologist that oversaw the preparation of the Habitat Assessment and Coachella Valley MSHCP Consistency Analysis, Delineation of State and Federal Jurisdictional Waters Report, Burrowing Owl Focused Survey and Special-Status Plant Focused Survey. In addition, Dr. McGill drafted and successfully processed a Coachella Valley MSHCP Equivalency Analysis through the Coachella Valley Conservation Commission since the project was located within a designated conservation area.

Lytle Creek Levee Repair and Interim Protection Project, Rialto, California. *CEMEX Construction Materials Pacific, LLC.* Project Manager. The project includes the reconstruction of a 100-year levee that was damaged as a result of severe storm events and the placement of riprap along existing levees to provide protection from significant storm flows within the Lytle Creek Wash. Dr. McGill led the coordination efforts for the endangered species permit (Biological Assessment) in support of the Section 7 Consultation with U.S. Fish and Wildlife Service to address potential impacts to San Bernardino kangaroo rat and Santa Ana River woollystar, both federally listed species. In addition, Dr. McGill managed the biological monitoring for construction activities within the Lytle Creek Wash to ensure compliance with the Terms and Conditions of regulatory approvals.

Diversified Pacific Residential Development, Redlands, California. *Diversified Pacific.* Department Manager. The City of Redlands approved the Diversified Pacific Residential development of 81 residential units and four common lots, located on two adjacent Tentative Tracts. Based on surveys conducted for San Bernardino kangaroo rat (SBKR) and a field survey with the USFWS, it was determined that SBKR occupied 7.7 acres of the Tentative Tracts, TT 16465. Dr. McGill prepared and processed a Low-Effect Habitat Conservation Plan (HCP), an Incidental Take Permit (Permit) under Section 10(a)(1)(B) of the Endangered Species Act, authorizing the loss of 7.7 acres of SBKR occupied habitat on the project site. In addition, Dr. McGill helped negotiate the mitigation requirements for the project and the SBKR Translocation Plan to remove SBKR from the project site into an offsite conservation bank. During the removal of SBKR from the project site, an additional 9.7 acres of habitat was determined to be occupied by SBKR. As a result, and in coordination with the USFWS, Dr. McGill amended the Low-Effect HCP to ensure mitigation covered all occupied habitats. To support the federal action of the Low-Effect HCP, Dr. McGill prepared a draft Environmental Assessment in cooperation with the USFWS to assess the direct, indirect, and cumulative impacts of the proposed residential development project associated with the Low-Effect HCP.

Upper Santa Ana River Habitat Conservation Plan, San Bernardino, California. *San Bernardino Valley Water Conservation District.* Project Manager. Responsible for project management. Dr. McGill supported the San Bernardino Valley Water Conservation District with the development and implementation strategy for the Upper Santa Ana Wash Plan and Habitat Conservation Plan (HCP), including Plunge Creek, for four years. The overall project site is approximately 4,400 acres with conservation occurring in approximately 1,900 acres. Dr. McGill was hired by the San Bernardino Water Conservation District to work directly with USFWS to address the Service's concerns over potential impacts resulting in jeopardy to San Bernardino kangaroo rat and slender-horned spineflower from the approval of the Upper Santa Ana River Wash Plan. Following a year of intensive inventories, Dr. McGill and USFWS were able to structure a conservation strategy and habitat restoration plan that has satisfied

USFWS and the Wash Plan and accompanying HCP have been formally endorsed by USFWS and the HCP is in its final planning stages.

Apple Valley MSHCP, Apple Valley, California. *Solution Strategies.* Project Manager. Dr. McGill was hired to provide technical expertise on the biological analysis of the Desert Renewable Energy Conservation Plan database needed to support the preparation of the Town of Apple Valley Multiple-Species Habitat Conservation Plan. Dr. McGill was responsible for determining the list of proposed covered species and natural plant communities, overseeing the preparation of the written species accounts and GIS habitat modeling exhibits, and leading field surveys to determine baseline habitat suitability for covered species.



Years of Experience: 12

Education

B.S., 2006, Biology, University of California at San Diego

Certifications

Certificate, 2012, Field Ornithology, University of California at Riverside, University Extension

Certificate, 2012, Wetland Delineation, Wetland Training Institute

Certificate, 2014, Certified California Rapid Assessment Method (CRAM) Practitioner, Riverine and Depressional Wetlands

Certificate, 2014, GIS and Spatial Analyst, California State University at Fullerton

Certificate Botany, 2015, University of California at Riverside, University Extension

Additional Training

Southwestern Willow Flycatcher Survey Training Workshop, Southern Sierra Research Station, 2014

Learning California Bird Sounds, Sea and Sage Audubon Society – Sylvia Gallagher, 2012

Introduction to Desert Tortoise Surveying, Monitoring, and Handling Techniques Workshop, Desert Tortoise Council, 2011

Skills and Specialties

General and Focused Habitat Assessments
Focused Sensitive Plant and Wildlife Surveys
Avian Surveys and Monitoring
Wetland and Stream Delineations
Regulatory Permit Processing
Mitigation Implementation
Endangered Species Permits

Travis J. McGill

Biologist/Regulatory Specialist

Mr. Travis McGill specializes in conducting due diligence surveys, habitat assessments, preparing biological technical reports, botanical surveys, protocol listed species surveys, and assisting with environmental permitting and compliance for both public and private sector clients. He assists clients in compliance with a range of environmental regulations, including the California Environmental Quality, National Environmental Policy Act, and State and Federal Endangered Species Acts. He also has experience preparing and processing federal and State Incidental Take Permits through the United States Fish and Wildlife Service (Section 7 and Section 10 of the Federal Endangered Species Act) and California Department of Fish and Game (Section 2080.1, 2081, subds. (b){c) of the Fish and Game Code).

Mr. McGill conducts delineations of state and federal jurisdictional waters and helps clients through the regulatory permit process pursuant to Sections 404 and 401 of the Clean Water Act, the California Porter-Cologne Water Quality Control Act, and Section 1602 et. seq. of the California Fish and Game Code. Mr. McGill has effectively drafted and processed numerous state and federal regulatory applications for residential, restoration, commercial, flood control, institutional, and transportation projects. Mr. McGill also performs California Rapid Assessment Method analyses on riverine and depressional areas to identify the functionality of a drainage system.

Mr. McGill also prepares and conducts Worker Education Training programs, biological monitoring, and nesting bird and burrowing owl clearance surveys in compliance with the federal Migratory Bird Treaty Act and California Fish and Game Code Section 3503, 3503.5, and 3513.

Project Experience

Meredith International Centre Project Burrowing Owl Relocation Plan, Ontario, California. *Sares-Regis Group.* Biologist. The Meredith International Centre Project proposes a mix of industrial, commercial, and residential land uses within five planning areas on approximately 257-acres located in the northern portion of the City of Ontario, San Bernardino County. Mr. McGill conducted focused burrowing owl surveys to document the number of burrowing owls and suitable burrows occurring on the project site. Subsequently, Mr. McGill prepared

a relocation plan that outlined the recommended methods proposed to relocate burrowing owls from the project site and provided measures that would be implemented for the maintenance, monitoring, and reporting of the relocated burrowing owls to increase chances of survivorship and ensure compliance with CDFW guidelines. Once the plan was approved by CDFW, Mr. McGill assisted Jeff Kidd in the active relocation of the burrowing owls from the project site. The burrowing owls found within the project site were captured and actively relocated to a Western Riverside County MSHCP burrowing owl conservation area.

Renaissance Specific Plan Burrowing Owl Relocation Plan, Rialto, California. *Lewis-Hillwood Rialto Company.* Biologist. The Renaissance Specific Plan was adopted by the City of Rialto in 1997 to provide a long-term strategy for the development of the Rialto Municipal Airport and surrounding area. Currently, Lewis – Hillwood Rialto Company, LLC owns or has an option to buy several of the properties within Renaissance Specific Plan Area. The proposed project included the development of a Town Center, residential housing ranging from low density to high density, a school, public park, a business center, and corporate center. Mr. McGill lead the biological studies for the project which include a general habitat assessment, focused burrowing owl survey, special-status plant suitability assessment, jurisdictional delineation and regulatory permitting. Several burrowing owl were found on the project site during the focused surveys, and Mr. McGill helped prepare a relocation plan that outlined the recommended methods proposed to relocate burrowing owls from the project site and provided measures that would be implemented for the maintenance, monitoring, and reporting of the relocated burrowing owls to increase chances of survivorship and ensure compliance with CDFW guidelines. Once the plan was approved by CDFW, Mr. McGill assisted the San Diego Zoo in the active relocation of the burrowing owls from the project site. The burrowing owls found within the project site were captured and actively relocated to a conservation site within the boundaries of the Western Riverside County MSHCP.

Burrowing Owl Focused Survey and Relocation Plan, Calexico, California. *Charles Group.* Biologist. Mr. McGill led the focused burrowing owl surveys and developed a relocation plan to passively relocate burrowing owls from the final phase of development. Mr. McGill conducted a focused burrowing owl surveys to document the number of burrowing owls and suitable burrows occurring on the project site. Subsequently, a relocation plan was developed and approved by CDFW to passively relocate burrowing owls from the property. The plan was successfully implemented.

Muscoy Groin No. 2 Storm Drain and Outfall Project, San Bernardino, California, *Vulcan Materials Company.* USFWS Authorized Biological Monitor. In accordance with the 2013 Biological Opinion for the project, Mr. McGill was authorized by the USFWS as a qualified biological monitor familiar with the ecology of the federally endangered San Bernardino kangaroo rat (*Dipodomys merriami parvus*; SBKR) and various other sensitive species associated with the Riversidean Alluvial Fan Sage Scrub plant community, a state threatened plant community. Mr. McGill prepared and implemented a USFWS approved Workers Education Awareness Program to all contractors and personnel working on the project. Mr. McGill monitored the site preparation and construction activities to ensure compliance with the Terms and Conditions of the Biological Opinion. Prior to initial ground disturbing activities, Mr. McGill conducted a pre-construction clearance surveys focusing on the presence/absence of nesting birds, burrowing owl (*Athene cincularia*), and sensitive plant species, including the federally and state endangered Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*).

Harmony Specific Plan Highland, California. *LCD Greenspot LLC (Lewis Op. Corp).* Biologist. The Harmony Specific Plan proposes to develop a master plan residential community. LCD Greenspot, LLC in coordination with the County of Orange Flood Control District is preparing a planned community specific plan for the 1,658-acre Greenspot Property. Mr. McGill conducted a habitat assessment and prepared the biological technical report and biological constraints analysis for the Harmony Specific Plan. Based on the results of the habitat assessment, Mr. McGill conducted focused surveys for burrowing owl and sensitive plants, and assisted with the focused surveys for California gnatcatcher (*Polioptila californica*), least Bell's

vireo, southwestern willow flycatcher (*Empidonax traillii extimus*), and San Bernardino kangaroo rat (*Dipodomys merriami parvus*). Mr. McGill also assisted with the preparation of the EIR for the project.

Salt Creek Trail Project, Cities of Menifee and Hemet, California. *County of Riverside Transportation Department.* Biologist/ Regulatory Specialist. The County proposes to construct and operate two (2) segments of the Salt Creek Trail, which will contribute to the County's ultimate goal for an approximately 16-mile-long multi-use trail connecting the cities of Hemet and Menifee. The Project offers an alternative to gasoline-powered vehicle trips, which is key to achieving state and local air quality objectives. Mr. McGill prepared the Caltrans Natural Environment Study, jurisdictional delineation, sensitive plant survey, Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) consistency analysis, Determination of Biologically Equivalent or Superior Preservation (DBESP), and regulatory permits for the project. In addition, Mr. McGill attended several of the Western Riverside County Regional Conservation Authority (RCA) pre-application meetings to ensure project consistency with the MSHCP and negotiate the mitigation requirements for impacts to jurisdictional waters. Based on negotiations with the RCA and regulatory agencies, Mr. McGill prepared a Habitat Mitigation Monitoring and Reporting Plan to satisfy the mitigation requirements for the project.

Upper Santa Ana River Habitat Conservation Plan, San Bernardino, California. *San Bernardino Valley Water Conservation District.* Biologist. Mr. McGill supported the San Bernardino Valley Water Conservation District with the development and implementation strategy for the Upper Santa Ana Wash Plan and Habitat Conservation Plan (HCP), including Plunge Creek, for four years. Mr. McGill lead focused surveys for the federally and state endangered slender-horned spineflower (*Dodecahema leptoceras*) and Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*).

Victorville Aggregates Railway Extension Project, Victorville, California. *CEMEX Construction Materials Pacific, LLC.* Biologist. The project included the construction of a new railway system and associated infrastructure that would be used to transport and process aggregate material from CEMEX's Black Mountain Quarry. Mr. McGill led the habitat assessment and jurisdictional delineation survey efforts and helped prepare the technical reports to ensure compliance with the Conditional Use Permit. Based on the results of the habitat assessment and jurisdictional delineation, Mr. McGill was able to assist with the design of the new railway system to avoid impacts to sensitive biological resources. In addition, Mr. McGill conducted focused surveys for desert tortoise (*Gopherus agassizii*) and Mojave monkeyflower (*Mimulus mohavensis*), provided CEMEX personnel with on-site Environmental Awareness Training and conducted multiple nesting bird and burrowing owl (*Athene cunicularia*) clearance surveys prior to initiating project activities.

Valley Crest and Yucca Reservoir Project, Apple Valley, California. *Golden State Water Company.* Biologist/Regulatory Specialist. Golden State Water Company is proposed to construct two 500,000 gallon above ground reservoir tanks and associated infrastructure. Mr. McGill prepared the habitat assessment, delineation of state and federal jurisdictional waters, and processed regulatory permits through the U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife. In addition, Mr. McGill conducted pre-construction nesting birds and desert tortoise clearance surveys, provided all personnel and contractors working on the project with on-site Environmental Awareness Training, and monitored initial grading and vegetation removal activities. During the clearance surveys, desert tortoise were observed within 500 feet of the project site. Mr. McGill developed stringent avoidance and minimization measures that were approved by the California Department of Fish and Wildlife to ensure the proposed project would not result in "take" of desert tortoise.