

December 3, 2004

Lorelei H. Oviatt
Senior Planner
Kern County Planning Department
2700 M Street Suite 100
Bakersfield, CA 93301

Re: Tentative Tract 6214 - Hageman Road

Dear Ms. Oviatt:

Per the developer's request, we have revised our previous estimates for the Hageman Road project Tentative Tract 6214 based on the new lot number that Adavco has provided. The current operational emissions from agricultural activities on the proposed project site and the estimated project emissions are summarized in Table 1 and outlined below.

**Table 1
Emissions Outlook**

Emissions	ROG (tons/year)	NO_x (tons/year)	CO (tons/year)	PM₁₀ (tons/year)	SO_x (tons/year)
Existing Agricultural	6.48	4.92	1.11	3.48	0.31
Operational and Area Source	9.07	8.26	66.58	0.40	0.05
Increased Emissions	2.59	3.34	65.47	-3.08	-0.26

Background

Hageman Northwest, LLP proposes a 378 unit single family residential development on the southeast corner of Hageman Road and Heath Road on approximately 160.5 gross acres in Kern County, California, just west of the city limits of Bakersfield. The project site includes the northwest quarter of Section 22, Township 29 South, Range 26 East, Mount Diablo Base and Meridian.

Existing Conditions at Project Site

The decrease in lot number does not affect the existing agriculture-related conditions at the project site. Therefore, based on our previous study the total emissions resulting from the agricultural operations conducted on the project site are shown on Table 2.

Table 2
Emissions from Existing Project Site Agricultural Operations

Activity	ROG (ton/yr)	NO_x (ton/yr)	CO (ton/yr)	SO_x (ton/yr)	PM₁₀ (ton/yr)	PM_{2.5}⁽¹⁾ (ton/yr)
Agricultural Equipment Exhaust ⁽²⁾						
-Irrigation Pump	0.44	4.65	1.02	0.31	0.33	0.33
-Tractor	0.02	0.27	0.09	--	0.01	0.01
Fugitive Dust ⁽³⁾						
-Land Preparation ^(4a)	--	--	--	--	1.09	0.44
-Wind-blown Dust ^(4b)	--	--	--	--	1.25	0.50
-Harvesting ^(4c)	--	--	--	--	0.08	0.03
-Unpaved Roads ^(4d)	--	--	--	--	0.72	0.11
Pest Control ⁽⁵⁾	6.02	--	--	--	--	--
Total	6.48	4.92	1.11	0.31	3.48	1.42

Notes: ROG = Reactive organic gases
 PM_{10, 2.5} = Particulate matter less than or equal to 10 or 2.5 microns in diameter, respectively
 NO_x = Nitrogen oxides
 SO_x = Sulfur oxides

⁽¹⁾PM_{2.5} fractions as percentage of PM₁₀ from AP-42 as follows: 100% for combustion sources (Section 3.3, Table 3.3-1, EPA, October, 1996);
 40% for miscellaneous sources (Section 13.2.5, EPA, January, 1995);
 15% for unpaved roads (Section 13.2.2, Table 13.2.2-2, EPA, December, 2003).

⁽²⁾Emissions from agricultural stationary diesel equipment were calculated using AP-42 Section 3.3, Table 3.3-1, EPA, October, 1996 for pre-Tier 1-2-3 equipment. Emissions from agricultural diesel mobile equipment (tractors) were calculated using URBEMIS 2002 Version 7.4, Appendix H for pre-1996 emission factors.

⁽³⁾Fugitive dust emissions were calculated for the existing 144-acre project site based on emission factors and methodologies in the Emission Inventory Procedural Manual, Methods for Assessing Area Source Emissions (CARB, 1997), as follows:

⁽⁴⁾(a) Land preparation emission factor developed from emissions data for Kern County and crop-specific data presented in Table 1 of Section 7.4 (Agricultural Land Preparation), August, 1997.

(b) Wind-blown dust emission factor is for non-pasture agricultural lands in Kern County, from Section 7.12 (Wind-Blown Dust – Agricultural Lands), Attachment A, July, 1997.

(c) Harvesting emission factor is for cotton harvesting in California, from Section 7.5 (Agricultural Harvest Operations), August, 1997.

(d) CARB default values used per Section 7.11 (Unpaved Road Dust, Farm Roads), August, 1997.

⁽⁵⁾California Environmental Protection Agency, Department of Pesticide Regulation, "Methodology for Determining VOC Emission Potentials of Pesticide Products", Spurlock, Frank, Sacramento, California, January 7, 2002.

Operational and Area Emissions

The emissions from the project are described in terms of operational emissions (mobile source emissions) and area source emissions. The total project emissions are shown in Table 3 below.

Table 3
Total Mitigated Project Emissions

Project	ROG (tons/year)	NO _x (tons/year)	CO (tons/year)	PM ₁₀ (tons/year)	SO _x (tons/year)
Area Source Emissions	3.47	0.87	0.60	0.00	0.01
Operational Emissions (Mobile sources)	5.60	7.39	65.98	0.40	0.04
Total Project Emissions	9.07	8.26	66.58	0.40	0.05
Existing Agricultural Emissions	-6.48	-4.92	-1.11	-3.48	-0.31
Net Emission Increase	2.59	3.34	65.47	-3.08	-0.26
SJVAPCD Level of Significance	10	10	N/A	N/A	N/A
Kern County Level of Significance (SJVAPCD)	10	10	N/A	15	N/A

The total emissions from the proposed project do not exceed the District's or County's threshold for ROG or NO_x with mitigation. Therefore, the proposed project is considered individually *less than significant* for NO_x and ROG with mitigation.

Mobile Source – Carbon Monoxide

Carbon monoxide emissions are a function of vehicle idling time and, thus, under normal meteorological conditions, depend on traffic flow conditions. Carbon monoxide transport is extremely limited; it disperses rapidly with distance from the source. Under certain extreme meteorological conditions, however, CO concentrations close to a congested roadway or intersection may reach unhealthful levels, affecting sensitive receptors (residents, school children, hospital patients, the elderly, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at an unacceptable Level of Service (LOS). CO "Hot Spot" modeling is required if a traffic study reveals that the project will reduce the LOS on one or more streets to E or F; or, if the project will worsen an existing LOS F.

A traffic study was prepared by Ruettgers and Schuler for this project. The traffic study did not reveal that the project would reduce the LOS of one or more of the streets to E or F after mitigation was implemented.¹ Also, the project will not affect any LOS F streets and, therefore, will not worsen an existing LOS F. Therefore, a CO "Hot Spot" analysis is not required. However, to be conservative an analysis was conducted anyway. The results are listed in the table below.

¹ The traffic study conducted was based on 435 dwelling units, not the current 378 units. This represents a conservative analysis of CO impacts.

Table 4
CALINE-4 Predicted Carbon Monoxide (CO) Concentrations

Intersection	Maximum Modeled Impact Year 2023 w/Project		Maximum Modeled Impact Year 2023 w/o Project		Project Increase	
	1 hr (ppm)	8 hr (ppm)	1 hr (ppm)	8 hr (ppm)	1 hr (ppm)	8 hr (ppm)
Hageman and Heath	5.9	3.5	5.9	3.5	0.0	0.0
Hageman and Renfro	6.1	3.7	6.1	3.7	0.0	0.0
Rosedale and Heath	8.5	3.1	6.4	3.8	2.1	1.3

1 hour concentrations include ambient CO of 5.7 ppm (Second highest 2 year Impact, 8-hour average corrected upwards for 1-hour averaging period).

8 hour concentrations were obtained by multiplying the 1-hour concentration by a factor of 0.6, as referenced in *Transportation Project-Level Carbon Monoxide Protocol*, Caltrans, December 1997. Predicted concentrations modeled using “worst case” option.

The modeling results are compared to the California ambient air quality standards for carbon monoxide of 9 ppm on an 8-hour average and 20 ppm on a 1-hour average. Neither the 1-hour average nor the 8-hour average would be equaled or exceeded at any of the intersections studied. Therefore, the direct impacts from the project are considered *less than significant*.

If you have any questions, please call me at (661) 326-1112.

Very truly yours

Mary Jane Wilson
President/CEO