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APPENDIX 8.1G

Cumulative Impact Protocol

Cumulative Impacts Analysis Protocol

Potential cumulative air quality impacts that might be expected to occur, resulting from the Project and other reasonably foreseeable projects, are both regional and localized in nature. These cumulative impacts will be evaluated as follows.

Regional Impacts

Regional air quality impacts are possible for pollutants such as ozone, which involve photochemical processes that can take hours to occur. The Project will be required to provide emissions offsets (mitigation) for ozone precursors at ratios ranging from 1.3:1 to 1.5:1 for NO_x and VOC emissions.

Although the relative importance of VOC and NO_x emissions in ozone formation differs from region to region, and from day to day, most air pollution control plans in California require roughly equivalent controls (on a ton-per-year basis) for these two pollutants. The change in emissions of the sum of these pollutants, equally weighted, will be able to provide a rough estimate of the impact of the project on ozone levels. The net change in emissions of ozone precursors from the project will be compared with emissions from all sources within Sacramento County and the Sacramento Valley Air Basin as a whole.

Air quality impacts of fine particulate, or PM₁₀, have the potential to be either regional or localized in nature. On a regional basis, an analysis similar to that presented above for ozone will be performed, looking at the three pollutants that can form PM₁₀ in the atmosphere, VOC, SO_x, and NO_x, as well as at directly emitted particulate matter. SMAQMD regulations will require offsets to be provided for PM₁₀ emissions from the project at ratios ranging from 1.0:1 to 1.5:1.

As in the case of ozone precursors, emissions of PM₁₀ precursors are expected to have approximately equivalent ambient impacts in forming PM₁₀ per ton of emissions on a regional basis. A table will be provided that compares the net change in emissions of PM₁₀ precursors from the project with emissions from all sources within Sacramento County and the Sacramento Valley Air Basin as a whole.

Localized Impacts

Localized impacts from the Project could result from emissions of carbon monoxide, oxides of nitrogen, sulfur oxides, and directly emitted PM₁₀. A dispersion modeling analysis of potential cumulative air quality impacts will be performed for all four of these pollutants.

In evaluating the potential cumulative localized impacts of the Project in conjunction with the impacts of existing facilities and facilities not yet in operation but that are reasonably foreseeable, a potential impact area in which cumulative localized impacts could occur will first be identified. In order to ensure that other projects that might have significant cumulative impacts in conjunction with the project are identified, a search area with a radius of 10 km from the project site will be used for the cumulative impacts analysis.

Within this search area, three categories of projects with combustion sources will be used as criteria for identification:

- Projects that are existing and have been in operation since at least 1999.
- Projects for which air pollution permits to construct have been issued and that began operation after 1999.

- Projects for which air pollution permits to construct have not been issued, but that are reasonably foreseeable.

Projects that are existing and have been in operation since at least 1999 will be reflected in the ambient air quality data that are being used to represent background concentrations; consequently, no further analysis of the emissions from this category of facilities will be performed. The cumulative impacts analysis adds the modeled impacts of selected facilities to the maximum measured background air quality levels, thus ensuring that these existing projects are accounted for.

Projects for which air pollution permits to construct have been issued but that were not operational by 1999 will be identified through a request of permit records from SMAQMD. The search will be requested for new or modified emission sources located within 10 km of the project site that have net emission increases greater than 10 lbs/day for CO, NO_x, SO_x, or PM₁₀. Projects that satisfy this criteria and that had a permit to construct issued after January 1, 1999, will be included in the cumulative air quality impacts analysis. The January 1, 1999 date was selected based on the typical length of time a permit to construct is valid and typical project construction times to ensure that projects that are not reflected in the 2000 ambient air quality data are included in the analysis.

A list of projects within the area for which air pollution permits to construct have not yet been issued, but that are reasonably foreseeable, will also be requested from the SMAQMD staff.

Given the potentially wide geographic area over which the dispersion modeling analysis is to be performed, the ISCST3 model will be used to evaluate cumulative localized air quality impacts. The detailed modeling procedures, ISCST3 options, and meteorological data used in the cumulative impacts dispersion analysis will be the same as those used in the ambient air quality impacts analyses for the Project. The receptor grid will be spaced at 180 meters and will cover the area in which the detailed modeling analysis performed for the Project indicates the project will have impacts that exceed the PSD significance levels.

Cumulative Impacts Dispersion Modeling

The dispersion modeling analysis of cumulative localized air quality impacts for the proposed project will be evaluated in combination with other reasonably foreseeable projects and air quality levels attributable to existing emission sources, and the impacts will be compared to state or federal air quality standards for significant impact. As discussed above, the highest second-highest modeled concentrations will be used to demonstrate compliance with standards based on short-term averaging periods (24 hours or less).

Supporting information will be provided, including the following:

- 1997 emissions inventory for Sacramento County and the Sacramento Valley Air Basin;
- List of projects resulting from the screening analysis of permit files by the SMAQMD;
- Map showing locations of sources included in the cumulative air quality impacts dispersion modeling analysis;
- Stack parameters for sources included in the cumulative air quality impacts dispersion

modeling analysis; and

- Output files for the dispersion modeling analysis.