LETTER 24 - Caroline Farrell and Brent Newell, Center on Race Poverty and the Environment

Response to Comment 24-1

The comment identifying the purpose of the letter and the commentors' general opinion regarding the adequacy of the PEIR are noted for the record.

Response to Comment 24-2

The general description of the purpose of the California Environmental Quality Act (CEQA) presented in the comment is acknowledged. It is noted that the purpose of preparing the PEIR for the project was to meet the requirements of CEQA. The commentors' general opinion regarding the analysis presented in the PEIR is noted for the record.

Response to Comment 24-3

The purpose of preparing the Draft PEIR was described on pages 1-1 and 1-2. The County developed the Element and prepared the PEIR to serve as the environmental documentation for implementation of the Element. Following adoption, dairy development projects that conform with all of the provisions presented in the Element would not require additional environmental review under CEQA. However, if a dairy development is proposed that does not conform with the goals, objectives, and policies of the Element, the development would be required to apply for a conditional use permit (CUP). Under the CUP process, additional environmental review under CEQA would be required. In those circumstances, the CEQA documentation could be tiered from the PEIR prepared for the Element. The PEIR meets the intent and requirements of CEQA and that identified impacts have been evaluated specifically and comprehensively in the PEIR. The commentors are referred to Responses to Comments 24-4 through 24-109 for further discussion of the comments presented in Comment Letter 24.

Response to Comment 24-4

The comment is noted for the record. Preparation of a PEIR is the most appropriate type of environmental review for the Element. As described on pages 1-2 and 1-3 of the Draft PEIR, the County recognizes that dairy management practices will evolve over time and that specific management practices will vary from dairy to dairy. The intent of the provisions of the Element is to allow individual dairy operators to design and operate their dairies in the most suitable manner given the site-specific conditions for their project. However, each dairy would be required to meet all provisions of the Element. The Element specifies the content of required plans and reports. If site-specific conditions at a proposed dairy site or proposed dairy design preclude the project from meeting the requirements of the Element, the project would require a CUP and further environmental review.

Response to Comment 24-5

Contrary to the statements made by the commentors, the impacts of transportation of manure were evaluated in the PEIR. The transportation analysis (Impact 4.9-8) assumed additional vehicle trips generated by dairies developed under the Element, including manure transport trucks. In addition, the air quality analysis (Impact 4.2-4) evaluated the air emissions generated by equipment at dairies, including manure trucks.

Response to Comment 24-6

The term "Best Available Control Measures" (BACM) has been removed from the Element.

Response to Comment 24-7

Kings County is required under CEQA to ensure that required mitigation measures are enforced. Section 15097 of the CEQA Guidelines states that:

> "In order to ensure that the mitigation measures and project revisions identified in the EIR or negative declaration are implemented, the public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects. A public agency may delegate reporting or monitoring to another public agency or to a private entity that accepts the delegation; however, until mitigation measures have been completed, the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program."

The County is bound by CEQA to adopt and implement a mitigation monitoring program. The Mitigation Monitoring Plan (MMP) for the proposed project is presented as Appendix C of this volume of the Final PEIR. The MMP identifies the timing of monitoring, the party responsible for monitoring compliance with the requirements, the method for compliance, and enforcement mechanisms for the mitigation measures developed for the project. The County is committed to implementation of the MMP and the comment presents no argument that the County cannot or would not abide by the requirements of the law to implement and enforce the MMP.

With regard to the commentor's reference to the Galhandro dairy site, enforcement efforts are currently being coordinated with the RWQCB. The County Planning Agency is waiting for RWQCB action before taking action on the herd size issue. In addition, the dairy operator has submitted an application for a CUP and is waiting for completion of the PEIR before proceeding with the expansion to bring the site into compliance.

Response to Comment 24-8

In response to the comment, **Objective DE 3.7** and **Policy DE 3.7a** have been added to the Element to reinstate the language referenced by the commentor. The County is committed to enforcement of the provisions of the Element and this PEIR. The Element and the PEIR do not apply to existing dairies unless the dairies expand. The County encourages all dairies to work toward certification under the California Dairy Quality Assurance Program. Section V (now VI) of the Element has been amended to reflect this intention. Please also refer to Response to Comment 1-4.

Response to Comment 24-9

The comment suggests that significant negative impacts on "other agricultural uses" could result if dairies are not set back from these uses. The comment does not identify the impacts that are suggested. **Policy DE 1.2h**, which requires setback of dairies from other dairies, was included in the Element as a "biosecurity" measure to reduce the potential for spread of illness between herds. Proposed dairy projects are required to ensure that runoff from dairy operations and cropland is controlled. Spray irrigation is not permitted. These mitigations and all of the other restrictions on dairy development appropriately minimize potential impacts on other agricultural uses.

Response to Comment 24-10

The preparers of the PEIR do not consider the analysis in the Element to be any less accurate as the dairy cattle population changes. The theoretical maximum herd includes existing and future dairy cattle. Therefore, the maximum herd that could occur under the Element at "buildout" is not affected by increases in the existing dairy herd. The 1999 dairy herd statistics were the most recent data available at the time the environmental impact analysis was prepared. Although the existing milk cow herd increased by approximately four percent between 1999 and 2000, the use of the 1999 herd for analysis of environmental impacts presents conservative results. Comparing the impacts of the smaller existing herd to the impacts of the maximum herd results in greater impacts.

Response to Comment 24-11

The calculation of potential salt loading related to the application of manure and process water made the assumption that salt loading rates used by the Regional Water Quality Board are appropriate estimates. It is beyond the scope of the PEIR to conduct technical review of RWQCB estimates of salt uptake for each crop. It is noted that most dairy developments would be expected to raise forage crops on their agricultural fields and it is predictable that these crops would replace some of the acreage currently used for cotton production.

Response to Comment 24-12

The justification for the assumption that process water would be stored for longer than 60 days was based on several factors. First, California confined animal facility regulations require that dairy process water lagoons be required to provide 120 days of process water storage. Therefore, the dairies will have the capacity to provide for storage that would exceed 60 days. Second, typical operation of modern dairy facilities includes recycling of process water for use in flushed freestall barns. This practice promotes longer term storage. Third, typical modern dairy operations use process water to irrigate forage crops. Typical forage crops, such as wheat and corn silage, only require irrigation at specific times throughout the course of the year, again promoting longer storage time. Finally, the Element requires advanced treatment of manure and process water. Whether the treatment is performed by aerobic or anaerobic treatment, the treatment requirement promotes longer storage.

Response to Comment 24-13

Estimation of salt loading of groundwater under implementation of the Element cannot be made accurately. The amount of dissolved solids (i.e., salts) in treated manure and process water, which would be reused as fertilizer and irrigation supply, would depend on factors that would be significantly variable. The amount of salts contained in manure would be influenced by the diets of cattle, which would be controlled by each dairy operator. The salt content would also be influenced by the geochemistry of the water supply at each dairy. In addition, the salt content would be affected by the advanced manure treatment technology implemented at the dairy facilities. The amount of salt infiltration into the subsurface would depend on the physical and chemical properties of the soils and sediments underlying each dairy facility. In recognition of all these variables, the Element appropriately contains policies to minimize the potential for salt loading of groundwater. The policies of the Element require low permeability liners in manure separation pits and lagoons (**Policy DE 4.1a.B.2**), development and implementation of a Manure Nutrient Management Plan that ensures application of treated manure at agronomic rates (**Policy DE 3.2e**), and groundwater quality monitoring [**Policy DE 6.1h** (now **6.2f**)].

Response to Comment 24-14

Phosphorus loading was considered during the water quality analysis but was not found to have a significant impact on the basis of environmental conditions. First, the project is designed to prevent flow of runoff or irrigation water into surface water bodies, a condition ensured by **Policy DE 4.1b**. Therefore, the possibility of excess phosphate loading of surface waters, which can result in algae blooms and depletion of dissolved oxygen, is avoided. In addition, **Policy DE 4.1a** requires development and implementation of a Manure Nutrient Management Plan to ensure that nutrient amendments (commercial fertilizers and treated manure) are applied at agronomic rates. Secondly, the soils in the

area of the designated DDOZs and NSOZs generally have relatively low phosphorus, the second most critical plant nutrient (after nitrogen). Most of the phosphorus is tied up in the alkaline soils at the site as low solubility phosphates not easily available to plants. Due to the low solubility of these compounds, phosphorus is not very mobile in the soil (i.e., not easily leached). Therefore, commercial fertilizers containing phosphorus (usually in the form of salts of phosphoric acids) are applied to nearly all crops grown in the region. The phosphorus contained in the manure would be used to offset the phosphorus deficiency of the soils and reduce the amount of commercial fertilizer applied to the crops.

Response to Comment 24-15

The nitrogen uptake estimates for crops presented in Table No. 5 of the Element were provided in discussions with the University of California Cooperative Extension farm advisors in Kings County, guidance documents from the Central Valley Regional Water Quality Control Board, and Natural Resource Conservation Service (NRCS) data when local data were not available. The use of available regional estimates of nitrogen content in plants and crop yield was considered more appropriate than using NRCS national averages.

The Element (**Policy DE 4.1b**) requires that the Manure Nutrient Management Plan (MNMP) developed and implemented at each dairy proposed under the Element ensure that the application of nutrients (including nitrogen) be balanced with the assimilative capacity of the site soils and planned crops. Achieving this requires testing of soils and manure. If testing indicates that nutrient loading is occurring in the cropland soils, the management plan would need to be adjusted.

Response to Comment 24-16

The comment is erroneous in stating that the PEIR does not disclose ambient levels of criteria air pollutants. In fact, Table 4.2-3 summarizes the last three years of air quality data for criteria pollutants monitored at the Van Dorsten station in Corcoran, Patterson station in Corcoran, and South Irwin Street station in Hanford. None of these monitoring stations collects ammonium nitrate data.

Response to Comment 24-17

The basin is designated as a "serious" nonattainment area for Federal PM_{10} air quality standards. Under this designation, the basin is required to meet the 24-hour and annual PM_{10} standards by December 31, 2006, which reflects a one-time, five-year extension granted by U.S. EPA. It is noted that dairies are not included in the attainment plan. Ultimately, if attainment with Federal standards is not achieved, possible sanctions include prohibition of approval of Federal grants for transportation improvement projects and

application of emission offset requirements (at a ratio of at least 2:1) for new or modified emission sources.

Response to Comment 24-18

The comment is noted for the record. Please refer to Response to Comment 24-17 for discussion on indirect impacts of air emissions.

Response to Comment 24-19

The Draft PEIR (pages 4.2-10 and 4.2-14) discloses the potential impacts associated with ozone (eye and lung irritation, vegetation damage, reduced crop yields, and deterioration of various products). The conversion of reactive organic gases (ROG) to ozone occurs as a complex set of photochemical reactions. A direct correlation between reactive organic gas emissions and ozone production has not been established. As indicated in the Draft PEIR (page 4.2-9), CARB and the SJVUAPCD are currently collecting the data necessary to develop photochemical modeling for ozone production. The preparers of the PEIR consider an attempt to quantify ozone production to be speculative. The PEIR presents the information necessary to determine the significance of ROG emissions as well as a quantification of the impact.

Response to Comment 24-20

The PEIR discloses the general human health effects and environmental impacts of increased ozone emissions. An estimation of the actual increase in ozone formation related to emission of ozone precursors (i.e., reactive organic gases and oxides of nitrogen) is beyond the scope of this PEIR. The complex atmospheric conditions and reactions required to result in ozone formation in the San Joaquin Valley Air Basin are not well understood and are being evaluated by the SJVUAPCD and CARB. It is reasonable and consistent with SJVUAPCD guidelines to identify increased ozone precursor emissions as significant on the basis that these emissions contribute to the nonattainment status of the San Joaquin Valley Air Basin for ozone.

Response to Comment 24-21

Similar to Response to Comment 24-20, which addresses the impact of potential increases in ozone, the PEIR has appropriately applied the general significance criteria of acknowledging that the proposed project would result in a cumulatively considerable net increase of any criteria pollutant (e.g., PM_{10}) for which the project region is in nonattainment under Federal or State standards (see page 4.2-43 of the Draft PEIR). The recognition of the potential health effects of PM_{10} is the primary basis for the designation of PM_{10} as a criteria air pollutant. The PEIR described the attainment status of the air basin and estimated PM_{10} emissions.

Response to Comment 24-22

The PEIR provides a discussion concerning the health effects associated with exposure to particulate matter and further includes an analysis of the potential particulate matter emissions that could result from operation of proposed dairy developments to determine the impact significance from particulate matter. The analysis compares the potential emissions against the San Joaquin Valley Unified Air Pollution Control District's significance threshold level/offset requirement for particulate matter. The setback's offset level was established as a mechanism to allow the release of air pollutant emissions by future projects while not interfering with the efforts in achieving the Federal and State ambient air quality standards for particulate matter for the air basin, which are based on protection of public health.

Response to Comment 24-23

The comment is noted for the record.

Response to Comment 24-24

The comment enters into the record a published study[26] that presents the results of a statistical analysis of the relationship of mortality and illness rates in 20 metropolitan areas in the U.S. to changes in the concentration of PM_{10} in air. The 20 urban areas, including Los Angeles, Oakland, San Diego, San Jose, and San Bernardino, had populations ranging from 1,185,394 to 8,863,164. Ambient PM_{10} concentrations (24-hour) in the 20 cities ranged from 24 to 46 $\mu g/m^3$. The results of the study indicate that each incremental increase of 10 $\mu g/m^3$ of PM_{10} in the atmosphere correlated to a 0.51 percent increase in mortality rates from all causes and 0.68 percent from cardiovascular and respiratory causes. It is important to understand the context of these results relative to the proposed project.

Kings County is located in a rural area as compared to the large metropolitan cities evaluated in the study. Comparison of health impacts in rural and metropolitan areas can be influenced by significant differences in lifestyles in these distinct populations and significant differences in density of population. In addition, significant differences in the chemical composition of the particulate matter in cities compared to that of rural areas would be expected.

Given the difference in land use (rural versus urban setting) between the study and the proposed project area, the appropriateness of applying the statistical correlation, which was developed for metropolitan areas with large populations, relating increased PM_{10} levels with increased mortality for evaluating the potential impacts of the project on local

[26] Samet, J.M., Dominici, F., Curriero, F.C., Coursac, M.S., and Zeger, S.L., 2000, Fine Particulate Air Pollution and Mortality in 20 U.S. Cities, 1987-1994, New England Journal of Medicine, 343(24):1742-1749.

mortality rates is questionable. The preparers of the PEIR consider that an estimate of any change in local mortality rates resulting from dairy development related to PM_{10} emissions or any other causes (e.g., workplace or vehicle accidents) would be speculative.

It is noted that the PEIR has identified the expected increase in particulate matter resulting from implementation of the proposed project as a significant and unavoidable impact. The potential effects on human health caused by PM_{10} emissions have also been discussed in the PEIR.

Response to Comment 24-25

The health effects of fine particulate matter are discussed in the PEIR. The PEIR indicates that exposure to fine particulate matter has been linked to health problems, including asthma, bronchitis, acute and chronic respiratory symptoms, such as shortness of breath and painful breathing, and premature deaths. The PEIR further indicates that the elderly, individuals with cardiopulmonary disease, and children appear to be at greatest risk.

Response to Comment 24-26

The commentor suggests that the PEIR "piecemeals" project-related air pollutant emissions. With respect to construction and operational emissions, the San Joaquin Valley Air Pollution Control District's August 20, 1998 Guide for Assessing and Mitigating Air Quality Impacts recommends that construction and operational emissions be analyzed separately because "...construction emissions produces only temporary impacts while the operational phase will produce emissions indefinitely into the future." The San Joaquin Valley Air Pollution Control District has provided their comments to the PEIR (Comment Letter 8). The setback indicated that the PEIR "...does a thorough job in addressing the air quality implications of dairy development in Kings County... The discussion and use of emission factors to quantify the air quality impacts is consistent with the District's understanding of the current state of knowledge in this field."

For operational emissions, the San Joaquin Valley Air Pollution Control District previously recommended that impacts be evaluated under three categories: indirect/mobile sources (e.g., regional vehicular traffic emissions), area sources, and stationary sources (Mitchell, 2001). The air quality analysis was conducted in a format generally consistent with this recommendation. However, due to a recent lawsuit currently against the setback, the setback is reconsidering this recommendation (Mitchell, 2001). In light of this information, impact discussions for PM_{10} emissions from equipment exhaust (Impact 4.2-4) and PM_{10} emissions from vehicular traffic (Impact 4.2-10) have been moved to Impact 4.2-3, which discusses PM_{10} emissions from fugitive dust. Similarly, impact discussions for ROG emissions from equipment exhaust (Impact 4.2-4) and ROG emissions from vehicular traffic (Impact 4.2-10) have been moved to Impact 4.2-6 (now 4.2-5), which discusses ROG emissions from cattle manure. NOx emissions from exhaust and NOx emissions from

vehicular traffic have been combined together under Impact 4.2-4 (now 4.2-5). Lastly, CO emissions from vehicular traffic have been evaluated in Impact 4.2-9.

Response to Comment 24-27

Quantification of PM_{10} construction emissions was not conducted per recommendations from the San Joaquin Valley Unified Air Pollution Control District. The setback's August 20, 1998 Guide for Assessing and Mitigating Air Quality Impacts states that "The SJVUAPCD emphasizes implementation of effective and comprehensive control measures rather than detailed quantification of construction emissions." As indicated in the PEIR, the San Joaquin Valley Unified Air Pollution Control District considers PM_{10} emissions to be the pollutant of greatest concern from construction activities and has established comprehensive control measures for construction-related activities to control these emissions, which are incorporated into the setback's proposed amendment of Regulation VIII (fugitive PM_{10} prohibitions). **Policy DE 5.1d** of the Element requires compliance with the setback's regulation during construction of a dairy facility to control PM_{10} emissions from fugitive dust.

The setback's guideline further indicates that quantification of emission reductions from construction-related mitigation measures is not needed. The setback's recommended approach to mitigating emissions focuses on evaluating whether all feasible control measures are being adequately implemented.

Response to Comment 24-28

The comment is noted for the record. The commentor is referred to Response to Comment 24-27.

Response to Comment 24-29

As indicated in Response to Comment 24-27, the San Joaquin Valley Unified Air Pollution Control District's guidelines consider PM_{10} emissions to be the pollutant of greatest concern from construction activities. The setback does not specifically require that construction equipment emissions for all projects be estimated and will recommend quantification methods for projects on a case by case basis. The setback has provided their comments to the PEIR (Comment Letters 5 and 8) and has not requested quantification of construction equipment emissions from the proposed project.

Furthermore, the PEIR indicates that **Policy DE 5.1g** (now **5.1f**) of the Element requires the owner/operator of a proposed dairy development/redevelopment to ensure that measures developed by the San Joaquin Valley Unified Air Pollution Control District are implemented to control exhaust emissions.

Response to Comment 24-30

Please see Responses to Comments 22-20 and 24-54.

Response to Comment 24-31

The comment is noted for the record. The commentor is referred to Response to Comment 24-29.

Response to Comment 24-32

Policy DE 5.1g (now **5.1f**) of the Element includes provisions requiring the owner/operator of a proposed dairy development to implement measures that would control exhaust emissions from construction equipment.

Response to Comment 24-33

As indicated in Response to Comment 24-22, the PEIR provides a discussion concerning the health effects associated with exposure to particulate matter and further includes an analysis of the potential particulate matter emissions that could result from operation of the proposed project to determine the impact significance from particulate matter. The analysis compares the potential emissions against the San Joaquin Valley Unified Air Pollution Control District's significance threshold level/offset requirement for particulate matter, which is ultimately based on the protection of public health.

The commentor is incorrect in indicating that the PEIR does not consider BACMs beyond the most recently adopted SJVUAPCD Regulation VIII. **Policy DE 5.1j** (now **5.1i**) of the Element requires that all applications for proposed dairies estimate the anticipated PM_{10} emissions from cattle movement and maintenance activities at unpaved corrals, perimeter roadways, and other unpaved areas throughout the dairy facility. In addition, **Policy DE 5.1h** (now **5.1g**) also requires the preparation of a Fugitive Dust Emissions Control Plan, which must describe and demonstrate conformance with **Policies DE 5.1e** and **5.1i** (now **5.1h**). **Policy DE 5.1i** (now **5.1h**) requires compliance with SJVUAPCD Regulation VIII. **Policy DE 5.1e** requires the control of fugitive dust emissions from cattle movement and maintenance activities at the unpaved corrals, perimeter roadways, and other unpaved roadways throughout the dairy facilities.

In addition, **Policies DE 6.1e** (now **6.2d**) and **6.2a** (now **6.3a**) provide for monitoring of dairy operations to demonstrate the Element's effectiveness in protecting the environment and the effectiveness of the mitigation measures required for each operating dairy facility in Kings County. Furthermore, **Policies DE 7.1a** (now **6.1a.A**), **7.1b** (now **6.1a.B**), and **7.1c** (now **6.1a.C**) provide a mechanism for the County to track and evaluate monitoring data, address dairy operational problems encountered, and compile general results of the monitoring program specified under the Element.

Response to Comment 24-34

As indicated in Response to Comment 24-33, **Policy DE 5.1h** (now **5.1g**) requires the preparation of a Fugitive Dust Emissions Control Plan, which must describe and demonstrate conformance with **Policies DE 5.1e** and **DE 5.1i** (now **5.1h**), policies that require control of fugitive dust emissions from cattle movement and maintenance activities at the unpaved corrals, perimeter roadways, and other unpaved areas throughout the dairy sites.

Response to Comment 24-35

The commentor suggests that support stock be put out to pasture instead of retaining the support stock in a corral as a means of mitigating for PM_{10} fugitive dust. Although this recommended mitigation measure would certainly reduce the amount of fugitive dust that would be generated from the corrals, this recommended mitigation measure would be considered to contain several flaws.

For instance, collection and treatment of manure generated by the support stock would be much more difficult to implement. This task would likely require the increased use of exhaust-generating equipment (compared to manure scraped from unpaved corrals) to collect manure. In addition, collection of all manure deposited throughout the entire pasture area cannot be ensured whereas manure deposited in unpaved corrals is contained in a confined area. Pasturing of dairy cattle, as suggested in the comment, does not occur and is not expected to occur in Kings County. However, manure that is left in the pasture area would inevitably decompose and, as a result, release air pollutants, such as reactive organic gases, methane, ammonia, and hydrogen sulfide. Also, PM_{10} emissions from fugitive dust would inevitably be generated during the manure collection process from disturbance of the pasture area by manure collection equipment.

Response to Comment 24-36

The commentor suggests the use of offsets to further mitigate operational PM_{10} emissions. SJVUAPCD administers an offsets program for regulated stationary sources. The SJVUAPCD requires stationary point sources to purchase offsets for PM_{10} emissions exceeding 15 tons per year. As discussed in the PEIR, however, dairies are not regulated as point sources by the SJVUAPCD (Draft PEIR, pages 4.2-8 and 4.2-43.)

The County has neither the authority nor the ability to create and administer an offsets program. "In mitigating or avoiding a significant effect of a project on the environment, a public agency may exercise only those express or implied powers provided by law other than this division." (Pub. Resources Code, § 21004.) Moreover, the issuance of air quality permits is not subject to CEQA (Pub. Resources Code, § 21080.24). Thus, even if dairies were a permitted source, offsets would never be required through the CEQA process.

If dairies were to participate in an offsets program, it would have to be administered by an agency with the appropriate authority, such as the SJVUAPCD or CARB. Neither entity has proposed to administer such a program. Regardless of which entity could impose and implement an offsets program, practical considerations make such a program infeasible for dairy PM_{10} emissions at this time. Any offsets program must include a reliable method of quantifying the emissions to be offset. As discussed in the PEIR, the appropriate factor for quantification of PM_{10} emissions has not been established (Draft PEIR, pages 4.2-29 to 4.2-32).

The Element requires the use of other control measures to reduce PM_{10} emissions to mitigate this impact to the extent feasible. See **Policies DE 5.1e, 5.1g (**now **5.1f), 5.1h** (now **5.1g**), **5.1i** (now **5.1h**), **6.1d** (now **6.2c**), and **7.1d** (now **6.1b**).

Response to Comment 24-37

The comment is noted for the record. The commentor is referred to Response to Comment 24-26.

Response to Comment 24-38

The comment is noted for the record. The commentor is referred to Response to Comment 24-26.

Response to Comment 24-39

The comment is noted for the record. The commentor is referred to Responses to Comments 24-20 and 24-26.

Response to Comment 24-40

The comment is noted for the record. As policy, the County does not restrict the use of equipment with gasoline or diesel engines meeting State and Federal emission requirements. The commentor suggests that biogas generated at dairies by controlled anaerobic processes would be an appropriate fuel for farm equipment. Only approximately 60 percent of the biogas would be methane (a gas similar to natural gas). The operator would need to separate the methane and remove any impurities. This is not practical or feasible.

Response to Comment 24-41

The Element (**Policy DE 5.1c**) requires new and expanded dairies to implement advanced manure treatment technologies and sets a performance standard for their effectiveness. The control of gas emissions will result in a reduction in the potential for odor problems to develop. The type of treatment system chosen by individual dairy operators will depend on site-specific conditions and the costs associated with different treatment

technologies. The preparers consider that the PEIR has provided sufficient information to support the determination that various treatment methods are capable of meeting the performance standard of fifty percent volatile solids removal. In addition to the requirements for manure treatment, **Policy DE 5.1b** of the Element requires that all proposed dairy projects develop and implement site-specific odor management plans.

Response to Comment 24-42

The Draft PEIR (page 4.2-21) discusses the decomposition of volatile solids and the relationship of that process to gas emissions. Aerobic and anaerobic treatment are further discussed on pages 4.2-17 through 4.2-21 of the Draft PEIR. The analysis presented in the Draft PEIR (page 4.2-70) acknowledges that immediate and complete decomposition of manure is not feasible and, therefore, release of gases generated by anaerobic bacteria would be expected. Quantification of these emissions is not possible due to the complex environmental conditions and variability of manure management. Due to these uncertainties, the Draft PEIR conservatively identifies these emissions as significant and unavoidable. In response to the comment, the text on page 4.2-21 of the Draft PEIR has been modified to clarify the discussion of volatile solids reduction and air emissions.

Response to Comment 24-43

The comment is noted for the record. **Policy DE 6.1f** (now **6.2e**) is an appropriate acknowledgment that the development of a practical method for sampling and analyzing air quality samples at dairy facilities may occur in the future. For example, current research is being conducted at a Washington State University research dairy to investigate new technologies for monitoring ammonia in the atmosphere at dairy operations. As discussed on pages 4.2-24 through 4.2-27 of the Draft PEIR, numerous ongoing and long-range research projects being conducted by USDA are investigating improved ways to quantify and monitor air emissions from confined animal facilities. This research, when complete, has the potential to result in the development of monitoring methodologies that would be appropriate for ongoing monitoring at dairies in Kings County.

In response to the comment, the text of **Policy DE 6.1f** (now **6.2e.B**) has been modified as follows:

> In the event that standard testing methods <u>are developed and required by the SJVUAPCD for</u>....

Response to Comment 24-44

The commentors' legal opinion is noted for the record. The impact of reactive organic gas emissions and the mitigating policies contained in the Element were discussed on pages 4.2-66 through 4.2-70 of the Draft PEIR.

Response to Comment 24-45

The commentors' legal opinion is noted for the record. Section 4.2 of the PEIR presents information (facts, data, and quantification) regarding reactive gas emissions that describes the magnitude and environmental effects of those emissions.

Response to Comment 24-46

The impacts of reactive organic gas emissions were described in the analysis of Impacts 4.2-6 and 4.2-12. Both impacts were found to be significant on the basis of their contribution to the existing and expected ozone nonattainment status of the San Joaquin Valley Air Basin. The commentors' reference to *Stanislaus Natural Heritage Project v. County of Stanislaus* (1996) 48 Cal.App.4th 182, 206 is not relevant. That opinion required the identification of impacts associated with supplying the proposed project with water, i.e., a secondary effect of the project. In this case, the emissions of reactive organic gases are directly discussed as an impact and the nonattainment status of the Basin is not an additional environmental effect that must be discussed separately.

Response to Comment 24-47

The Draft PEIR (page 4.2-12) acknowledges that ammonium nitrate particles in the $PM_{2.5}$ range could result from reactions between ammonia and nitric acid. The PEIR also provides an estimate of the potential ammonia emissions that could result from proposed project operations. A calculation of a reasonably accurate estimate of $PM_{2.5}$ emissions that could result from ammonia emissions is not possible at the present time. The estimate of secondary $PM_{2.5}$ emissions caused by ammonia emissions would require a regional atmospheric photochemical model, which has not been developed by U.S. EPA, CARB, or SJVUAPCD. Development of such a model is beyond the scope of this PEIR.

In response to the comment, the text of page 4.2-56 of the Draft PEIR has been amended to acknowledge that an unknown but significant amount of secondary $PM_{2.5}$ potentially produced by reactions of ammonia emissions from dairies would increase the PM_{10} emissions caused by dairy development.

Response to Comment 24-48

Contrary to the comment, the Draft PEIR (pages 4.2-70 through 4.2-73) does evaluate the potential impact associated with ammonia releases from proposed dairy operations. The PEIR provides an estimate of the potential ammonia emissions that could result during project operations. The Draft PEIR (page 4.2-12) also provides a discussion of the health impacts associated with ammonia. The PEIR indicates that ammonia is an irritant that inflames wet body tissues, even at low concentrations. The PEIR further indicates that mucous surface irritation results when exposed to between 100 and 500 parts per million (ppm) of ammonia and that immediate irritation of the eyes, nose, and throat occurs at

exposure levels between 400 and 700 ppm. The PEIR states that exposure to levels between 2,000 and 3,000 ppm can cause eye irritation, coughing, and frothing at the mouth, which could be fatal, and that exposure to concentrations of about 5,000 ppm can lead to respiratory spasm and rapid asphyxia. The PEIR also indicates that exposure to 10,000 ppm of ammonia is fatal.

Response to Comment 24-49

The comment is noted for the record. The commentor is referred to Response to Comment 24-50

Response to Comment 24-50

The PEIR provides a discussion of feasible technologies that are capable of reducing ammonia emissions, anaerobic treatment, aerobic treatment, and combined anaerobic/aerobic treatment systems. The PEIR indicates that implementation of these technologies is required by the Element to reduce ammonia emissions from cattle manure. The PEIR, however, acknowledges that, even with the implementation of a treatment system, ammonia emissions could continue to be generated from such manure sources as stockpiled manure and that the possibility of immediately treating all manure generated at dairies to eliminate the release of ammonia emissions is impractical. The PEIR, therefore, appropriately considered the impact to be significant and unavoidable.

Response to Comment 24-51

Contrary to the commentor's opinion, the PEIR provides a complete discussion of the hydrogen sulfide emissions from proposed dairy operations. The PEIR indicates that hydrogen sulfide emissions could be generated from cattle manure decomposition, although quantification of the potential hydrogen sulfide emissions was not included in the PEIR due to the lack of the availability of an applicable emission rate factor. The PEIR identifies the inclusion of hydrogen sulfide under the California Air Toxics "Hot Spots" Information and Assessment Act. The PEIR identifies policies contained in the Element that are relevant to hydrogen sulfide emissions from cattle manure.

In summary, **Policy DE 3.1a** addresses hydrogen sulfide emissions in the development of the countywide policy. **Policy DE 5.1c** requires the preparation of an MTMP that would be implemented to reduce air pollutant emissions from manure, including hydrogen sulfide. **Policy DE 6.1f** (now **6.2e**) requires that, when standard methods for testing air emissions become available, dairy owners/operators would be required to test for air pollutants, including hydrogen sulfide. The PEIR acknowledges that there is a current lack of available standards to determine the effectiveness of manure treatment technologies in reducing hydrogen sulfide as well as other air pollutants associated with manure decomposition. An accurate method for quantifying the potential air pollutant emissions

from treated manure are anticipated to be available following completion of USDA ARS research activities under the national programs. The PEIR further indicates that because hydrogen sulfide emissions would be expected even after mitigation, the residual impact is conservatively considered to be significant and unavoidable.

Response to Comment 24-52

Contrary to the comment, the Draft PEIR (pages 4.2-75 through 4.2-77) provides an adequate discussion of the feasible mitigation measures to reduce methane emissions from dairy operations. The PEIR describes the two main sources of methane, cattle digestion and decomposition of cattle manure. The PEIR evaluated the proposed Element to determine whether the policies contained in the Element would provide adequate measures to reduce methane emissions that could be generated from dairy operations. It is noted for the record that methane emissions from dairies are not currently regulated by CARB or U.S. EPA.

The PEIR acknowledged that **Policies DE 3.1a, 5.1c, ~~5.1f,~~ ~~6.1b~~, 6.1e** (now **6.2d), 6.1f (**now **6.2e), ~~6.1g,~~** and **6.2a (**now **6.3a)**, and policies under **Goal DE 7 (**now **6)** of the Element are relevant to reducing methane emissions from cattle manure. The PEIR also estimated methane emissions for future conditions for dairies requiring the implementation of an advanced treatment system specified under **Policy DE 5.1c**.

The air quality analysis indicated that implementation of **Policies DE 3.1a, 5.1c, ~~5.1f~~, ~~6.1b~~, 6.1e (**now **6.2d), 6.1f (**now **6.2e), ~~6.1g~~, 6.2a (**now **6.3a),** and **7.1d (**now **6.1b)** would reduce methane generated from ruminant livestock and manure, although methane would continue to be released by the dairy cattle and temporarily stockpiled manure even after the mitigation measures are implemented. Therefore, the impact associated with methane emissions was considered to be significant and unavoidable.

Response to Comment 24-53

A reasonably accurate quantification of the amount of vehicular emissions generated under the Element would require specific knowledge of the location and size of the dairy as well as the location of end points of the vehicle trips (i.e., milk or cheese processing facility, feed sources, and worker residences). The distance of the vehicular trip is the predominant influence on the generation of emissions. Response to Comment 24-54 provides an analysis of the potential vehicular emissions generated by dairy operations under the Element.

Response to Comment 24-54

The comment references an Environmental Impact Report prepared by Kings County for the Chamberlain Ranch Planned Dairy Development project ("Chamberlain Ranch EIR"). Vehicular emissions were estimated for each of four proposed dairy facilities. Estimation of the emissions was possible since the location and management practices were described by the proposed project. The commentor accurately cites the estimated vehicular emissions for reactive organic gases (0.19 ton per year), PM_{10} (0.02 ton per year), and NOx (0.97 ton per year) for one of the four proposed dairies (Dairy A). It is noted for the record that the Chamberlain Ranch EIR found the impact of vehicular emissions on air quality to be less than significant.

However, in response to the comment, the preparers of the PEIR have prepared an estimate of vehicular emissions related to the range of dairy sizes presented in Table 4.2-5c (i.e., 500-, 735 (705)-, 2,000-, and 5,000-milk cow dairies). This range of conditions is presented to show the public the impacts over variable size projects and to be consistent with other information presented in the PEIR. The vehicular emissions have been estimated using the California Air Resources Board URBEMIS7 computer model (the same model used to estimate emissions from the Chamberlain Ranch project). The estimated number of vehicle trips was developed from site-specific data presented for the four different size dairies in the Chamberlain Ranch EIR. Because the lengths of the vehicle trips are not known, the default values recommended by CARB for the URBEMIS7 model were used. Table 4.2-5c of the Draft PEIR has been amended to present the estimates of vehicular emissions.

The exhaust emissions from equipment used at the dairy sites were also estimated for the four dairy size classes. Again, the dairy site equipment was estimated using data presented in the Chamberlain Ranch EIR to determine the types and number of equipment that would be used at the variable size dairies. These estimates are presented in Table 4.2-5c of the Draft PEIR. The estimates of vehicle and dairy equipment exhaust contribute to the total emissions related to the project.

In response to the comment, the discussions of PM_{10} and ozone precursor emissions have been amended to acknowledge the total emissions from dairy operations, including vehicular and equipment emissions. In addition, Tables 4.2-5a and 4.2-5b have been amended to include these emission estimates. The PM_{10} and ozone precursor emissions remain significant and unavoidable.

The comment estimates that the total vehicular emissions generated by trips associated with dairy development projects under the Element to be 13.6, 69.6, and 1.4 tons per year of ROG, NOx, and PM_{10}, respectively. In reality, this emission estimate would only apply at full buildout. The Draft PEIR (page 5-11) estimates that, assuming a five percent growth

rate, full buildout would not occur until 2022. The annual emissions rate would increase as dairies are constructed.

Response to Comment 24-55

The preparers of the PEIR do not agree with the suggestion made by the commentor to compare the total vehicular emissions potentially generated by all dairy projects developed under the Element to SJVUAPCD's threshold for individual point sources. Although the PEIR used these thresholds, dairies are not considered point sources by the SJVUAPCD or Kings County. If new or expanded dairy projects were developed, the SJVUAPCD thresholds would be applied to each project. If emissions at an individual site were to be less than the threshold, the individual project would not be considered to have a significant impact on air quality. The Element is a program for land use development. The actual threshold for dairy development under the Element as a program would be the SJVUAPCD threshold values times the number of dairies that are actually developed (e.g., if 72 dairies were developed, the collective threshold for NOx would be 720 tons per year, not 10 tons per year, which applies to a single project). However, each project would be contributing to cumulative air quality impacts. The amendments to the discussion of Impacts 4.2-3 and 4.2-4 discussed in Response to Comment 24-54 address the total emissions of PM_{10} and ozone precursors (ROG and NOx) resulting from all sources related to dairy development.

Response to Comment 24-56

Please refer to Response to Comment 22-14.

Response to Comment 24-57

The regional groundwater quality conditions in Kings County were discussed on pages 4.3-8 through 4.3-11 of the Draft PEIR. The discussion included information generated by published USGS reports evaluating the regional impacts of salinity, nitrate, and pesticides. The reports were published during the period 1991 through 1998. The frequency of detection of nitrates above drinking water standards was specifically disclosed (Draft PEIR, page 4.3-11). The PEIR also provided more recent data collected in the Tulare Lake Basin. The preparers of the PEIR consider this information to be recent and extremely relevant.

Response to Comment 24-58

Contrary to the commentors' assertion, the potential impact of adverse water quality associated with construction activities was analyzed on pages 4.3-14 and 4.3-15 of the Draft PEIR. The comment suggests that the impacts be quantified but does not suggest a methodology for such quantification or what should be quantified.

Response to Comment 24-59

There are several factors that limit the potential impacts to the environment of flooding of fields fertilized with treated manure and process water. First, the probability of flooding in a 100-year event would be low (one percent). Secondly, **Policy DE 1.2c** prohibits application of manure during floods or threat of floods. **Policy DE 4.1b** requires manure and process water to be applied on cropland at agronomic rates. Therefore, nutrients (which could be potential pollutants if discharged to surface water) in the treated manure would be assimilated by the crops between the infrequent flooding events. Potential pathogens in treated manure would be subjected to drying, a condition that would limit long-term survival of these organisms between flood events. Lastly, the flood zones within the DDOZs are generally terminuses of stream systems. Most of the flood water would drain to the Tulare Lake Bed and eventually evaporate; and those waters temporarily inundating farmland would not be permanent fresh water habitat.

Response to Comment 24-60

The commentors are referred to Response to Comment 24-14. Within the environment of Kings County, nitrogen would be the limiting nutrient with regard to agronomic rates of application of manure and process water. **Policy DE 4.1a** requires development and implementation of a Manure Nutrient Management Plan for each proposed dairy development. **Policy DE 4.1b** requires that "nutrients" (which include nitrogen, phosphorus, and potassium) be managed to avoid overapplication on crops.

Response to Comment 24-61

The commentor incorrectly states that the PEIR "identifies atmospheric fallout as an impact to surface water quality..." The PEIR states that, after considerable discussion and presentation of background on the issue, the potential impacts associated with atmospheric fallout of ammonia are *less than significant*. A literature review conducted by researchers at the University of California Cooperative Extension "...uncovered no cause and effect data regarding atmospheric nitrogenous compound concentrations and eutrophication of water resources that may harm aquatic life."[27]

The analysis presented in the hydrology and water quality section of the PEIR correctly states that the air quality section of the PEIR includes mitigation measures designed to reduce emissions of nitrogen-containing compounds. While the analysis and mitigation measures presented in the air quality section were unable to quantify the reduction in emissions due to lack of available research on emissions from aerobic treatment systems and emissions from effluent from aerobic or anaerobic systems, it is a certainty that

[27] Shultz, Tom, and Collar, Carol, 1993, *Dairying and Air Emissions*, University of California Cooperative Extension, Dairy Manure Management Series.

emissions from dairies developed under the Element would produce lower emissions (per animal unit) than dairies without the controls (i.e., advanced manure treatment) required by the Element.

Response to Comment 24-62

An impact to surface water quality occurs when one or more beneficial uses of the subject water body is impaired. The Central Valley RWQCB maintains an inventory of impaired water bodies within its jurisdiction (referred to as the 303(d) list). The Central Valley RWQCB is able to consider any valid source of data when considering a pollutant for listing. Based on review of the current 303(d) list (1998) and the draft update (2002), there are no surface water bodies in Kings County that are impaired for ammonia or other nitrogen-containing compounds, indicating that this pollutant is not currently causing impacts to beneficial uses. The County is already a location of intense agricultural activity, including operating dairies that do not have in place the types of emissions controls that would be required under the Element. If current agricultural practices have not resulted in impairment of water bodies in the County, it is reasonable to assume that modern facilities with tighter controls on emissions would not cause new impacts associated with air emissions and surface water quality.

It is not relevant or feasible to present water quality data on all surface water bodies in Kings County, particularly when the potential for the proposed project to affect surface water quality is less than significant.

Response to Comment 24-63

The comment is noted for the record. The Draft PEIR analysis (pages 4.3-20 and 4.3-21) of potential impacts of atmospheric fallout is appropriate and adequate.

Response to Comment 24-64

The consumptive use of water at dairies developed under the Element was discussed on pages 4.3-22 and 4.3-23 of the Draft PEIR. The analysis disclosed the expected water use at dairy facilities and on associated agricultural fields. The mitigating effect of **Policy DE 3.2h** on potential groundwater depletion in areas of the County known to have limited water supplies was discussed. Under the policy, a Hydrologic Sensitivity Assessment (HSA) must be prepared by a qualified professional for proposed dairy development projects in those areas. The HSA must demonstrate that groundwater use will not exceed safe yield or that water demand must be met by surface water supplies that are demonstrated in the HSA to be available and reliable. These provisions constitute performance standards for the mitigating policy.

Response to Comment 24-65

The commentors' legal opinion is noted for the record. Please refer to Responses to Comments 24-66 and 24-67.

Response to Comment 24-66

The comment is noted for the record. The preparers of the PEIR reviewed and cited the Central Valley Regional Water Quality Control Board (RWQCB) study discussed in the comment. The commentor emphasizes that the observed groundwater degradation reported in the RWQCB study set out to "determine what usually was occurring under typical well run dairies." Although the study used that language, the study did not demonstrate that the dairies were "well run." The study does not indicate if any of the controls set forth by the provisions of the Element, such as lined lagoons, advanced treatment of manure and process water, available acreage for agronomic application of manure, implementation of manure nutrient management, and groundwater monitoring, were in place at the dairies that were studied. These controls were not typically required as part of Waste Discharge Requirements (WDRs) or waivers of WDRs.

In addition, the conditions at the dairies evaluated by the Central Valley RWQCB study differ substantially from conditions in Kings County. The Central Valley RWQCB study indicates that the "soils at the cooperating dairies have sandy and coarse materials throughout the profile" (page 2, paragraph 4). Most of the surface soils and subsoils in Kings County contain substantial amounts of silt and clay (refer to Response to Comment 24-70 for additional discussion of soil types in the County). Also, the Modesto and Turlock areas (the locations of the dairies evaluated in the Central Valley RWQCB study) receive approximately twice the annual rainfall as Kings County and, therefore, infiltration rates would be expected to be substantially greater. The combination of more permeable soils and high precipitation rates (relative to Kings County) identified at the study sites renders the Central Valley RWQCB study findings largely irrelevant to Kings County. The second study[28]

For the record, the commentor indicates that the salinity levels in groundwater (reported as TDS) underlying the dairies in the Central Valley RWQCB study exceeded Federal MCLs. There are no primary (health-based) MCLs for TDS. The secondary (aesthetics-based) MCL for TDS is 500 mg/L. Secondary MCLs generally address taste, odor, and appearance, not health or toxicity considerations.

[28] Boyajian and Ross, Inc., 1998, Groundwater Investigation Report, Visalia Water Conservation Plant, City of Visalia, Tulare County, California, report prepared for the Visalia Public Works Department.

Response to Comment 24-67

The comment is noted for the record. With regard to the Central Valley Regional Water Quality Control Board study referenced in the comment, please refer to Response to Comment 24-68. The commentor is correct in indicating that support stock housed in corrals will defecate and urinate on the ground. As indicated in the comment, **Policy DE 5.1e** of the Element requires periodic scraping of the corrals, which would reduce the accumulation of manure solids on the corral surface. **Policy DE 4.1a.B.2.g** requires that positive drainage be maintained in corrals and **Policy DE 4.1a.B.2.h** requires that maintenance of corrals shall include filling of any depressions. These measures would significantly reduce the potential for infiltration of runoff into the subsurface. State regulations (CCR Title 27, Division 2, Subdivision 1, 22562(a)) require that runoff from corrals be collected and retained at dairy facilities. **Policy DE 4.1a.B.2** requires that manure separation pits and lagoons used to store runoff and process water be lined to minimize infiltration.

Response to Comment 24-68

The commentor refers to the studies used in the PEIR analysis of pollutant migration at the corrals as "weak," but offers no explanation for this assertion. The commentor indicates that the analysis presented in the PEIR relied on two studies; however, four separate studies are referenced in the analysis. It should be pointed out that the studies referred to in the PEIR were published in refereed professional journals and that the two studies referred to by the commentor appear to be unpublished reports.

As described in Response to Comment 24-66, the Central Valley RWQCB study is not particularly relevant because of the differences in soil types and climate at the study area relative to Kings County.

Response to Comment 24-69

Based on review of the comment, the commentor did not understand where the moisture seal is formed and how the corrals would be maintained. The moisture seal that forms in corrals is below the active maintenance surface. Routine manure removal (conducted properly) would not be expected to affect the seal. As required under **Policy DE 4.1a.B.2.h** (and analyzed on page 4.3-34 of the Draft PEIR), care shall be taken not to disturb the seal layer in the corrals. Dairy personnel shall be taught to correctly use manure collection equipment.

Response to Comment 24-70

The comment incorrectly infers that "the PEIR relies" on the conclusions of a study (Elliot, et al., 1972) investigating groundwater conditions beneath a feedlot (Draft PEIR, page 4.3-34) for the determination that the potential for significant impacts to groundwater would occur as the result of implementation of the Element. The study was described in the discussion of published studies that have investigated the impacts of confined animal facilities. It is noted for the record that the Elliot study investigated a feedlot (which generally has a higher animal density than dairy corrals) that had not had manure removed for 15 years. The study did not indicate what form of fertilization was used for the adjacent cropland, which was used for comparison of groundwater conditions, but presumably the crops were not fertilized with manure from the feedlot. Therefore, the commentor's point regarding the relevance of manure application rates seems moot. The preparers of the PEIR consider the discussion of the results of the Elliot study to be appropriate but stress that conclusions regarding the potential impacts related to corral management were based on the corral management requirements presented in **Policy DE 4.1a.B** of the Element.

Response to Comment 24-71

With regard to the relevance of the Central Valley RWQCB and Visalia studies, please refer to Responses to Comments 24-66 and 24-68.

The commentor provides no data or evidence to suggest the studies used in the analysis are "misleading." The commentor appears to indicate that the consideration of a 30-year-old study is somehow not appropriate. An abundance of research was conducted on pollutant migration at feedlots in the 1970s (considerably less has been published in refereed journals in the past few years). The soil physics and pollutant migration processes have not changed. These data are not obsolete. The preparers of the PEIR focused on the best available studies that pertained to the conditions in the County.

Response to Comment 24-72

The commentor has not made a credible case for a significant impact to groundwater quality under the corrals. The analysis presented in the Draft PEIR (pages 4.3-33 to 4.3-34 and Responses to Comments 24-67 to 24-71) finds the potential impact to be less than significant and therefore no additional mitigation measures are necessary.

The comment suggests that pasturing of support stock (vs. housing these cattle in corrals) could mitigate potential impacts on groundwater quality. The San Joaquin Valley floor is not a suitable environment for pasturing cattle, and pasturing is not practiced in Kings County. The hot, dry summers would place significant stress on the cattle. The climate also presents significant limitations on maintaining pasture crops. The number of cows that could be supported per acre would be significantly reduced relative to dairies where

the stock would be housed in corrals. Increased importation of feed would probably be required. The collection of manure from pastures is not practical and, therefore, treatment of manure to reduce emissions would not be feasible. For the above reasons, pasturing of support stock is determined to be an ineffective and infeasible mitigation measure.

The comment also suggests lining of corrals as feasible mitigation. **Policy DE 4.1a.B.2.g** requires that corrals be underlain by clayey soils. Management of cattle in corrals would result in compaction of the soils and the formation of an organic mat. These conditions as well as the requirement to maintain positive drainage in the corrals would minimize the need to require liners for corrals.

Response to Comment 24-73

The total dissolved solids (TDS) loading that would be expected to occur in the vicinity of the process water ponds can be estimated by dividing the average TDS content of the process water by the maximum allowable seepage volume through the liner of the ponds. A conservative estimate of the average TDS content of process water in the lagoons was calculated based on literature values for content of the predominant salt-forming elements (potassium, calcium, sodium, magnesium, sulfur, and chloride) in dairy cow manure [0.76 pound per day per animal unit (ASAE, 1998)] and the volume of water expected to be used to flush the facilities on a daily basis. This estimate is conservative because it assumes that all these constituents contained in the flushed manure would go into solution and be delivered to the process water lagoon. Realistically, some of the dissolved solids content would be removed with the solids collected in the manure separation pits.

As an example, a 2,000-cow dairy (5,908 animal units including support stock) would generate approximately 4,490 pounds of dissolved solids on a daily basis. Approximately 80 percent or 3,592 pounds of the dissolved solids would be directed to the process water lagoons (20 percent would be managed as dry manure). It is assumed the dairy is estimated to flush with approximately one acre-foot (1.23×10^6 liters) of water per day. Therefore, the resulting estimated concentration of total dissolved solids (conservatively assuming all salts go into and stay in solution) in the process water is calculated to be 1,327 mg/L. This estimate compares reasonably with the range of concentrations of total dissolved solids in samples of process water collected from lagoons at Central Valley dairies.[29]

Based on a maximum allowable seepage velocity of 1×10^{-6} cm/sec (as specified in **Policy DE 4.1a.B.2.c**), approximately 317,988 gallons (1.20×10^6 liters) of water per acre of pond would be expected to infiltrate through the liner on an annual basis. Therefore, directly

[29] Shultz, Tom, 2000, Tulare County Dairy Farm Advisor, personal communication with Kevin O'Dea of BASELINE, 7 July.

under the ponds, the annual total dissolved solids loading rate could be as high as 3,513 lb/acre/year. However, the ponds comprise a relatively small portion of the total acreage of a dairy facility. Based on recently proposed dairy projects in Kings County, a dairy facility for 2,000 milking cows would occupy approximately 46 acres and have approximately 6 acres of wastewater lagoons. Therefore, the amount of salt infiltrating the subsurface could be 21,078 lb/year (3,074 lb/acre of pond/year × 6 acres of pond).

The non-pond areas of the dairy facility would not be expected to contribute significantly to salt loading. Manure from the freestall barns and corral is collected and either applied directly to cropland or temporarily stored in process water ponds, treated, and then applied to fields following dilution with well water. Therefore, it would be appropriate to evaluate the estimated salt loading at the pond acreage relative to the total acreage of the dairy facility. The annual per acre salt loading at a 2,000-cow dairy facility would be approximately 458 lb/acre (21,078 lb/46 acre). Conservatively assuming that the concentration of salt in process water is doubled, the salt loading could be 916 lb/acre.

Response to Comment 24-74

The calculation of expected seepage through the pond liners performed by the commentor's subconsultant did not consider the natural formation of a seal during operation. The formation of a seal by accumulation of solids on the surfaces in dairy wastewater lagoons is uncontested. The liner requirements recommended in the PEIR stipulate that the materials lining the wastewater lagoons and manure separation pits be shown to have a seepage velocity of not more than 1×10^{-5} centimeters per second (cm/sec). Considering that the formation of an organic seal at the surface of the liner will occur and that the organic seal will further reduce the seepage velocity by 10^{-1} cm/sec, the effective seepage velocity would be 1×10^{-6} cm/sec. Inclusion of the reduction in seepage that would occur due to the presence of an organic seal would reduce the calculated seepage by an order of magnitude [i.e., 65 million gallons (199 acre-ft) of seepage would be reduced to 6.5 million gallons (19.9 acre-ft)].

In comparison, Class III landfills (which can accept manure as a waste) are required to have liners with a hydraulic conductivity of not less than 1×10^{-6} cm/sec. It is important to understand a significant difference between the recommended performance standard in the PEIR and the landfill liner requirements. The landfill requirement states only that the liner material has a hydraulic conductivity that is less than 1×10^{-6} cm/sec. The PEIR performance standard requires that the seepage velocity is less than 1×10^{-6} cm/sec. Hydraulic conductivity (K) is a property of the liner material (i.e., a constant that characterizes the capacity of the material to transmit water). The requirement for a particular hydraulic conductivity does not specifically address the other variables that determine the rate at which water is transmitted through a liner material, including hydraulic gradient (I). In contrast, the performance standard for the PEIR specifies the

seepage velocity (v), which is a function of the hydraulic conductivity, hydraulic gradient, and effective porosity of the material. Therefore, the performance standard requires consideration of the hydraulic head imposed by impounded water in the wastewater lagoon, a condition generally not present in a landfill. Therefore, the seepage velocity performance standard is more rigorous and appropriate for a lagoon than specifying only a maximum hydraulic conductivity.

The performance standard in Mitigation Measure 4.3-7 sets a maximum seepage velocity for the materials that line the sides and bottom of the process water lagoons. Although flow through the liner material can occur, the rate would be slow, 10^{-6} cm/sec (1 ft/yr). Water infiltrating through the liner could transport dissolved solids (including salt constituents) into the subsurface. Salt migration related to management of manure is addressed by guidelines set by the Central Valley Regional Water Quality Control Board. Those guidelines indicate that dairy Nutrient and Irrigation Water Management Plans should provide sufficient land for manure application to maintain a salt loading rate of less than 3,000 pounds per acre per year. Using the (corrected) calculations of the commentor's subconsultant, which include consideration of the organic seal, the total non-nitrate salt loading would be expected to be approximately 277 pounds per acre per year (4,037,478 divided by 14,573 acres). (Please note the final calculation in the comment is incorrect: 40,374,781.5 divided by 14,573 does not equal 29,08 (sic) or 2,908, it actually equals 2,771.)

The estimated salt loading rate is more than ten times lower than the Central Valley RWQCB recommended maximum of 3,000 pounds per acre per year.

Response to Comment 24-75

Refer to Response to Comment 24-74.

Response to Comment 24-76

The commentor has drastically overstated the severity of the potential impact as described in Response to Comment 24-74. The salt loading that would be expected to occur is substantially lower than the Central Valley RWQCB recommended loading rate.

Response to Comment 24-77

Policy DE 6.1h (now **6.2f**) of the Element specifically states the minimum requirements for water quality monitoring at individual dairies developed under the Element. These requirements are not deferred as suggested by the commentor.

Response to Comment 24-78

The potential for adverse impacts of dairy development under the Element on special status species (including the San Joaquin kit fox) was discussed in Impact 4.4-1 of the Draft

PEIR (pages 4.4-7 and 4.4-8). As indicated in that discussion, **Objective DE 3.3** of the Element promotes the protection of special status species and their habitat. **Policy DE 3.3a** provides for site specific biological surveys at dairy operations located in areas where sensitive habitat is likely to occur.

Response to Comment 24-79

The comment is noted for the record. In response to the comment, **Policy DE 3.3a** has been modified to require biological and wetlands surveys to be conducted for all new and expanded dairy projects developed under the Element.

Response to Comment 24-80

Please refer to Response to Comment 24-79. **Policy DE 3.3a** has been modified to require dairy projects at which special-taxa species have been identified by a site-specific biological survey to apply for a Conditional Use Permit, which would require further environmental review.

Response to Comment 24-81

Policy DE 1.2e has been modified to provide the clarification requested by the commentor.

Response to Comment 24-82

Policy DE 3.3a of the Element requires a site-specific biological resource and wetland survey for new and expanded dairy projects. If the surveys indicate that impacts on sensitive species may occur, additional environmental review would be required under the Conditional Use Permit process.

Response to Comment 24-83

The PEIR presented information on the recorded occurrences of special-taxa species and their habitat following review of the California Natural Diversity Data Base (2000) records available at the time of the Notice of Preparation. This information was presented on Figure 4.4-1 and the source of the information was cited on the figure and referenced in Section 7 of the PEIR. This information is not considered by the preparers of the PEIR to be dated, as asserted by the commentor.

Response to Comment 24-84

The types of wetlands present or potentially present in Kings County were described on page 4.4-6 of the Draft PEIR. **Policy DE 3.3a** requires that biological resource and wetland surveys be prepared in accordance with Federal and State guidelines that define the characteristics of wetland environments.

Response to Comment 24-85

In response to the comment, the preparers of the PEIR contacted Tulare County Environmental Human Health Services (TCEHSD) to request data on the testing of water supply wells at Kings County dairies for the presence of coliform. During the period January 1997 to January 2002, 632 water supply well samples were collected. Total coliform was detected in 158 samples (25 percent) of these samples. In general, the presence of coliform is interpreted by the TCEHSD to represent contamination of the distribution system or wellhead and not the groundwater pumped from the well. When coliform is detected, the dairy operators are notified and it is recommended that the distribution system and well are disinfected. Following disinfection, confirmation sampling is performed. In most cases, confirmation testing does not indicate the presence of coliform suggesting that the groundwater is not a continuing source of coliform.[30]

Response to Comment 24-86

In 2000, the Department of Pesticide Regulation reports that 5.2 million pounds of pesticides were applied in Kings County. The top five pesticides (on the basis of weight applied) were sulfur, sodium chlorate, metam-sodium, petroleum oil, and mineral oil. The most common pesticides expected to be used at dairy facilities would be insecticides containing organophosphate compounds (e.g., chlorpyrifos and diazinon) and pyrethroids (e.g., cyfluthrin and fenvalerate). Within the County in 2000, 130,093 pounds of chlorpyrifos were applied; 83 percent of the applications were on corn and alfalfa crops and 8 percent were used for structural pest control. Diazinon was applied at a rate of 12,421 pounds with 38 percent used for structural control of pests. The rate of application for cyfluthrin (376 pounds) and fenvalerate (0.15 pound) is much lower. The amount of pesticide use at the dairies facilities developed under the Element cannot be accurately predicted. However, all pesticide applications are required to be performed under State and Federal regulations governing pesticide use.

Response to Comment 24-87

As indicated in the discussion of Impact 4.8-1, implementation of the Element would not be expected to significantly increase the use of agricultural chemicals and would reduce the amount of acreage on which agricultural chemicals would be applied. As discussed in the Draft PEIR (page 4.8-7), the potential exposure of workers and the public to hazardous materials is addressed in **Objective DE 4.3** and **Policy DE 4.3a** of the Element.

[30] Bairstow, Mark, 2002, Dairy Inspector, Tulare County Environmental Human Health Services, personal communication with Kevin O'Dea of BASELINE, 7 February.

Response to Comment 24-88

The use of antibiotics at dairy facilities is regulated by the California Department of Food and Agriculture. Existing regulations require the testing of milk products for trace levels of antibiotics (or antimicrobials) and control the potential for consumption of milk containing unsafe levels of these and other potentially harmful compounds. It would be speculative to assume that development of dairies in Kings County under the Element would directly or indirectly affect the consumption of milk products and any associated health effect related to that consumption. The County considers potential health effects of the consumption of milk or meat products produced at dairies to be outside the scope of the PEIR. The Notice of Preparation for the Draft PEIR was distributed to all responsible agencies, including the Kings County Department of Environmental Health and the California Department of Food and Agriculture. No responsible agency indicated that the scope of the PEIR should include analysis of the potential impacts of consumption of milk or meat products. Please refer to Response to Comment 22-61 for further discussion of potential environmental impacts related to antimicrobial use at dairies.

Response to Comment 24-89

The potential exposure of workers to pesticides and other hazardous materials was discussed on pages 4.8-6 and 4.8-7 of the Draft PEIR. The conclusion in the PEIR that compliance with existing regulations (as required by **Policy DE 4.3a** of the Element) regarding the use, storage, and disposal of hazardous materials is considered appropriate feasible mitigation of the potential exposure of workers and the public.

Response to Comment 24-90

The comment is noted for the record. The preparers of the PEIR agree that agricultural workers and the public can be exposed to pesticides. These chemicals are legally produced, distributed, and used by workers and other members of the public. The potential human exposure during the production, storage, and use of pesticides is regulated by Federal, State, and local agencies. In California, the regulations for pesticide management are contained in the California Code of Regulations Title 3, Division 6. Article 3 of Subchapter 3 of Chapter 3 of Division 6 sets regulations for field worker safety that include provisions for worker training, field reentry, field posting, and record keeping. Implementation of these regulations, which have been developed on the basis of years of scientific research and governmental rule making, is considered to be the only feasible mitigation to reduce potential impacts related to pesticide use to levels of acceptable risk.

Response to Comment 24-91

The storage, use, and disposal of insecticides at dairy facilities to control flies and mosquitoes is regulated by existing pesticide regulations. Please refer to Response to Comment 24-90. **Policy DE 4.3b** requires dairy operators to prepare a Pest and Vector Management Plan. Guidance for the preparation of the plans presented in Appendix J of the Element promote the implementation of good housekeeping practices and biological pest control prior to the use of chemical control. Insecticide use at dairies would replace insecticide use for agricultural crop production. The amount of insecticide use for crops is highly variable and depends on the type of crops, climatic conditions, and other factors. It would be speculative to assert whether or not pesticide use at dairies developed under the Element would be greater than pesticide use for existing crops.

Response to Comment 24-92

Please refer to Response to Comment 24-93. The infiltration of water from storage lagoons at dairies is inevitable. Infiltration of dairy process water from lagoons has not resulted in any documented case of public water supply infection by pathogens associated with dairy cattle in Kings County. Despite the fact that the dairy industry has supplied millions of pounds of beneficial food products for decades, a significant public health problem related to dairy operations has not been demonstrated or referenced by the commentor. The County, through development of the goals, objectives, and policies, is requiring safeguards (i.e., lagoon liners, advanced manure treatment, containment of runoff from dairy facilities and cropland, and inspection of well seals) that minimize the potential of any such risk.

Response to Comment 24-93

The comment focuses on the potential health risk impacts related to *Cryptosporidium parvum*. This organism is a small protozoal parasite that lives in and is shed from humans, domestic animals, and wildlife species. The infectious stage of cryptosporidium is as an oocyst [a small (5 microns in diameter) resistant egg]. Oocysts are shed from the digestive tract of infected mammals and released to the environment with the excretion of feces. Within dairy herds, nearly all cryptosporidium shedding occurs from young (one to three weeks in age) calves; minor shedding has been suspected but not confirmed in older cattle.[31] The commentor is correct in pointing out that cryptosporidium is commonly detected at dairies.

Several factors affect the infectious viability of the *Cryptosporidium parvum* oocysts once they are released to the environment. Adverse conditions for viability include drying and heating. Migration (i.e., infiltration) of viable oocysts into the subsurface are affected by

[31] Atwill, Edward, 2002, University of California School of Veterinary Medicine, Research Veterinarian, personal communication with Kevin O'Dea of BASELINE, January.

soil type, soil moisture conditions, slope, and vegetation. The potential for downward migration of all small particles (including oocysts) is reduced by decreasing hydraulic conductivity. Finer-grained soils (i.e., clays and silts) have lower hydraulic conductivity than coarser-grained soils (i.e., sands and gravels). As water infiltrates, small particles are filtered out and adsorb to larger particles. This relationship applies to oocysts, viruses, and other pathogens. Laboratory studies[32] indicate that vertical migration of oocysts in medium textured soils (clay loam, silty loam, and loamy sandy soils; similar to soils in the designated DDOZs and NSOZs) can occur to depths of 12 inches but that the majority (73 percent) of oocysts remain in the upper inch of the soil column. Recent studies completed by University of California researchers[33] indicate that less than one percent of oocsyts applied to a fine sand sediment column were passed through the column. Clearly, *Cryptosporidium parvum* oocysts are effectively filtered and adsorbed in the very shallow subsurface.

The preparers of the PEIR believe that the following environmental conditions and provisions of the Element mitigate the potential exposure of drinking water supplies to degradation by pathogens at dairy facilities to a less-than-significant level:

- hot, arid climate conditions in the southern San Joaquin Valley, which promote inactivation of pathogens;

- requirements for advanced manure treatment, which promote inactivation of pathogens by oxidizing conditions (aerobic treatment) or heating (controlled anaerobic treatment);

- requirements for low hydraulic conductivity liners for manure separation pits and lagoons;

- medium to fine grained surface soil types, which limit infiltration of residual pathogens during land application;

- requirements for collection and containment of runoff from manured areas;

- requirements for irrigation design to prevent runoff from manure application areas at dairy facilities;

[32] Mawdsley, J.L., Brooks, A.E., and Merry, R.J., 1996, Movement of the protozoan pathogen *Cryptosporidium parvum* through three contrasting soil types, Bio Fertil Soils 21:30-36.

[33] Harter, T., Wagner, S., and Atwill, E., 2000, Colloid transport and filtration of *Cryptosporidium parvum* in sandy soils and aquifer sediments, Environmental Science and Technology, 34(1):62-70.

- absence of surface water sources for drinking water in the area of or downstream of designated DDOZs and NSOZs;

- requirements for setbacks between water supply wells and dairy facilities; and

- requirements for inspection and repair of water supply well seals at dairy development sites.

Response to Comment 24-94

Please refer to Response to Comment 24-93. Outbreaks of human cryptosporidiosis (i.e., clinical human infection by cryptosporidium) are nearly always caused by contamination of drinking water supplied by surface waters. In some of the documented outbreaks, implications have been made, but not confirmed, that the source of the contamination was associated with confined animal facilities. The cryptosporidiosis outbreak in Milwaukee, Wisconsin was not conclusively determined to have been caused by shedding of this organism at dairy facilities. There are no surface drinking water supplies within or downstream of the DDOZs and NSOZs designated in the Element.

Although more than 140 dairies have been in operation in Kings County since 1982, only one person has been diagnosed with cryptosporidiosis (see Response to Comment 22-59). It is noted that the dairies have not been subject to the environmental controls required by the Element. For these reasons, the risk of a cryptosporidiosis outbreak is very low.

Response to Comment 24-95

The comment is noted for the record. The County is committed to the protection of drinking water supplies in Kings County. It is noted that, within the County, no potential source has ever resulted in an outbreak of cryptosporidium infection.

Response to Comment 24-96

The suggestions made by the commentor have been considered. However, the imposition of a tax on milk, feed, and manure shipments is considered unnecessary and infeasible. All County arterial, collector, and minor roadways are designated for truck use by the County. As such, these roadways are built and maintained to support truck trips. The construction and maintenance of the roads are financed by taxes generated by the sale of fuel. The fairness and adequacy of the taxing system for road maintenance is beyond the scope of the PEIR.

Response to Comment 24-97

The use of electricity at dairy facilities would be in support of the production of milk products to meet consumer demand. The County considers the use of electricity for this

purpose to be appropriate and necessary. The electricity would be used for that purpose whether the Element is implemented or not. This use of energy is not wasteful and is not considered an adverse environmental impact. For the record, a study conducted for the California Energy Commission indicated that the average electrical energy use at ten dairies in California was between 0.8 and 2.0 kilowatt-hours per milking cow per day.[34]

Response to Comment 24-98

Please refer to Responses to Comments 6-1 and 6-2.

Response to Comment 24-99

The commentors' suggestion that cultural resource surveys be performed for all proposed dairy development sites is noted for the record. Most areas within the designated DDOZs have already been graded and plowed for agricultural crop production. These activities have likely resulted in significant disturbance of any cultural resources at the surface and in the shallow subsurface. **Policy DE 3.3a** requires a CUP (and additional environmental review) for dairy projects located in areas of existing pasture or range land or natural vegetation (i.e., areas where agricultural grading may not have been performed). **Policy DE 3.1d** of the Element requires that, if the required review of proposed dairy projects by the California Historical Resources Information System indicates that cultural resources are known or suspected, then an evaluation of the site needs to be made by a qualified archaeologist. These policies would minimize the potential for disturbance or destruction of known or suspected cultural resources. The provisions of **Policy DE 3.1e** are considered to be an appropriate and feasible mitigation for the potential disturbance of unknown or unsuspected cultural resources. This is a typical mitigation measure required by the County for any type of project that involves grading or construction of large areas that potentially contain cultural resources.

Preconstruction surveys are neither feasible nor necessary for all dairy sites. The Dairy Element has been modified to include additional steps to avoid potential impacts on cultural resources. Documentation of a California Historic Resources Information Resources System records review and a Sacred Lands File Check by the Native American Heritage Commission must be submitted with all dairy applications (**Policy DE 3.1d**). If the survey identifies any impacts on historical, archaeological or paleontological resources, then the applicant will not be eligible to obtain SPR approval by the Zoning Administrator and will instead complete a conditional use permit application process.

[34] Moser, M., 1997, Resource Potential and Barriers Facing the Development of Anaerobic Digestion of Animal Waste in California, report prepared for the California Energy Commission, Contract No. 500-93-039.

Response to Comment 24-100

The citations of the CEQA Guidelines are noted for the record. The commentors state that the PEIR is inadequate for failing to list the 149 existing dairies in Kings County. Instead of providing the names of each individual dairy, the preparers of the PEIR took the more reasonable and informational approach of providing a map of the location of the existing dairies and information on the total herd size of the existing dairies (Draft PEIR Figure 5-1, Table 5-1).

The PEIR presented information regarding past, present, and probable future projects similar to the dairy development projects that could occur under the proposed Element. Table 5-1 of the Draft PEIR lists the number of existing dairies in Kings County at the time of release of the notice of preparation for the Draft PEIR. The table groups the dairies relative to the size of the dairy herds and presents the number of milk cows with each dairy size group for the years 1982, 1987, 1990, 1995, and 1999. Appendix G of the Draft PEIR presents the milk cow herd size for all dairies in Kings County at the time of the release of the Draft PEIR. Figure 5-4 shows the locations of the existing dairies. Table 5-2 lists the approved and proposed dairies in Kings County and identifies their locations. Table 5-3 lists the number of dairies and the size of the milking cow herds for each of the eight counties in the San Joaquin Valley Air Basin. The commentors imply that all past, present, and probable future projects must be "named." The CEQA Guidelines do not require that related projects be named.

Given the information contained in the PEIR, the preparers consider that the PEIR meets the requirements of CEQA to list past, present, and probable projects producing related or cumulative impacts, including those projects outside the control of the agency.

Response to Comment 24-101

The comment suggests that the PEIR has not disclosed the severity of the environmental impacts of air emissions related to implementation of the Element. The potential impacts of air emissions on the environment and public health were described at length in the Setting section and the Air Quality section of the PEIR. By their nature, air quality impacts of the proposed project are cumulative impacts in that the emissions contribute to regional air quality problems. The Draft PEIR (pages 5-8 through 5-16) presents an analysis of the cumulative impacts of air emissions. When possible, the analysis used available emissions factors to estimate the expected quantity of particular air pollutants for identified cumulative projects. The commentors' opinion that "quantification of pollution is meaningless" is noted for the record. The quantification of emissions provides the public and the decision makers an opportunity to evaluate the severity of the cumulative emissions. The analysis presented in the Draft PEIR also describes the contribution of the cumulative dairy projects (including potential dairy development under the Element)

relative to available regional estimates of total pollutant emissions. The analysis also describes the implications of the emissions on the attainment status for PM_{10} and ozone.

Response to Comment 24-102

The Draft PEIR's discussion of cumulative air quality impacts cannot reasonably be described as "conclusory." The preparers of the PEIR did not make "glib" findings of significance to "shirk" their statutory duty. The ambient air quality in the San Joaquin Valley Air Basin is discussed in Section 4.2. The PEIR provides a discussion of the various Federal, State and local air quality standards (Draft PEIR, pages 4.2-1 through 4.2-10). The PEIR discusses the attainment status for ozone, carbon monoxide, particulate matter, ammonia, hydrogen sulfide, and methane (Draft PEIR, pages 4.2-10 to 4.2-14). For each pollutant, the health impacts and the consequences of nonattainment are discussed.

The conclusion made in the Draft PEIR that the cumulative impacts of PM_{10}, reactive organic gases, ammonia, hydrogen sulfide, and methane are significant and unavoidable were based on the extensive analysis presented. The impacts were determined to be significant on the basis of the significance criteria presented in the Draft PEIR (page 4.2-43). Specifically, PM_{10} and reactive organic gas emissions would be expected to violate ambient air quality standards, contribute substantially to existing air quality violations, and result in a cumulatively considerable net increase of criteria pollutants for which the air basin is in nonattainment under Federal air quality standards. In addition, cumulative PM_{10}, reactive organic gases, ammonia, and hydrogen sulfide emissions are considered by the PEIR to expose receptors to substantial pollutant concentrations. The PEIR presents substantial evidence that the significant air quality impacts cannot be reduced to less-than-significant levels through feasible mitigation.

Response to Comment 24-103

The preparers of the PEIR do not consider all CAFOs to be "related projects" for purposes of the cumulative impacts analysis. The possible realm of projects that could be considered CAFOs is too broad and the impacts from each type of CAFO are different from the impacts from dairies. Other CAFOs in Kings County were used in calculating the theoretical herd size because the calculation of the theoretical herd size is based on nitrogen and salt loading. To calculate the theoretical herd size, all sources of nitrogen and salts were considered, including CAFOs and spreading of sewage sludge. These other types of developments were considered in the calculation of the theoretical herd size, not because they are similar projects, but because they contribute to the amount of nitrogen and salt loading.

Furthermore, it would be infeasible to calculate air emissions for every confined animal facility in the San Joaquin Valley Air Basin. Each type of CAFO would have different types of emissions and different emissions factors for each type of pollutant.

The cumulative analysis presented in the Draft PEIR has provided sufficient information to support the conclusions regarding the significance of cumulative impacts. It is important to note that, in commenting on the analysis presented in the PEIR, Dave Mitchell, Supervising Air Quality Planner with the San Joaquin Valley Unified Air Pollution Control District (Comment 8-1), concluded that the PEIR "does a thorough job in addressing the air quality implication of dairy development in Kings County." Furthermore, Mr. Mitchell comments that the "District concurs with the impacts identified as significant and unavoidable."

Response to Comment 24-104

The comment is noted for the record. Contrary to the first statement presented in the comment, the cumulative water quality impacts were discussed in the Draft PEIR (pages 5-16 and 5-17). Furthermore, the PEIR correctly bases the finding of less than significant cumulative water quality impacts on the threshold of significance that will be adopted by the County according to CEQA Guidelines section 15064.7. There is no limitation in CEQA restricting the use of thresholds of significance adopted according to CEQA Guidelines section 15064.7 to initial studies. Please also see Response to Comment 24-105. In addition, please refer to Response to Comment 24-93, which summarizes the effective and feasible mitigation of water quality impacts provided by the Element and PEIR.

Response to Comment 24-105

CEQA Guidelines section 15130, subdivision (d) provides that a "no further cumulative impacts analysis is required when a project is consistent with a general, specific, master or comparable programmatic plan where the lead agency determines that the regional or areawide cumulative impacts of the proposed project have already been adequately addressed . . ." Similarly, subdivision (e) of that guideline provides that, if a cumulative impact was already addressed in a prior plan, and the project is consistent with that plan, then the EIR for that project should not further analyze the cumulative impact.

As discussed in the PEIR, the Element is consistent with, and exceeds the requirements of, the Water Quality Control Plan for the Tulare Lake Basin (the "Basin Plan") (Draft PEIR, pages 5-16 to 5-17). The Basin Plan specifically addresses confined animal activities as a source of water quality degradation.

For the sake of providing full disclosure to the public and in accordance with CEQA Guidelines section 15130, subdivision (a), the PEIR does include a brief cumulative impacts discussion of water quality (Draft PEIR, pages 5-16 and 5-17).

Response to Comment 24-106

As discussed in Response to Comment 24-105, the County may rely on the previously adopted Basin Plan for the cumulative impacts discussion. Contrary to the comment, the PEIR discusses the current water quality in Kings County in the Water Resources section (Draft PEIR, pages 4.3-7 to 4.3-11).

Response to Comment 24-107

The comment is noted for the record.

Response to Comment 24-108

The commentors suggest that the County should consider a "no-dairy economic development alternative" to the Element. The PEIR did not consider an alternative that assumes no future dairy development as such an alternative would be fundamentally inconsistent with the objectives of the Element. The Board of Supervisors will consider all the alternatives analyzed in the PEIR. The commentors' opinions that the Board should adopt the Fifty Percent Reduced County Herd Size alternative and consider even greater herd reduction are noted for the record.

Response to Comment 24-109

The commentors' opinion is noted for the record.