

INITIAL STUDY

A. PROJECT BACKGROUND INFORMATION

- 1. Project Title:** Amendments to Rule 4351 (Boilers, Steam Generators, and Process Heaters – Phase 1), Amendments to Rule 4305 (Boilers, Steam Generators, and Process Heaters – Phase 2), and New Rule 4306 (Boilers, Steam Generators, and Process Heaters – Phase 3)

2. Lead Agency Name and Address

San Joaquin Valley Unified Air Pollution Control District (District)
1990 E. Gettysburg Ave.
Fresno CA 93726

3. Contact Person:

CEQA: Mr. Hector R. Guerra
(559) 230-5800

Rules: Mr. Manuel Salinas
(559) 230-5833

4. Project Location:

The rule applies to new and modified stationary sources located within the boundaries of the San Joaquin Valley Unified Air Pollution Control District (see Exhibit 1, Map of District boundaries).

5. Project Sponsor's Name and Address:

San Joaquin Valley Unified Air Pollution Control District
1990 E. Gettysburg Ave.
Fresno CA 93726

6. Description of Project:

The Initial Study is based on May 7, 2003 version of draft Rules 4305, 4306, and 4307. The proposed amendments to Rules 4305 and 4351 are intended to correct the rule deficiencies identified by the United State Environmental Agency (EPA) on February 28, 2002 to make the rule fully approvable for inclusion in the State Implementation Plan (SIP). Unless the rule deficiencies are corrected and the rules are fully approved for inclusion in the SIP by October 1, 2003, EPA will impose sanctions in the San Joaquin

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Valley consisting of increased offset requirements for major sources and revocation of federal funding for highways. New Rule 4306 is intended to implement Reasonably Available Control Measures (RACM) as required by the federal Clean Air Act. Further, the California Clean Air Act as well as the District's 2002 and 2005 Rate of Progress Plan require the implementation of all feasible control measures to reduce the emissions of VOC and NOx in order to achieve attainment of the federal and state health-based ozone standards. This rulemaking project to amend Rules 4305 and 4351 and to develop new Rule 4306 is intended to reduce the emissions of nitrogen oxides (NOx) and carbon monoxide (CO) pursuant to the District's ozone and particulate matter attainment strategies.

Rules 4305, 4306, and 4351 apply to sources that operate boilers, steam generators, and process heaters with a rated heat input greater than 5 million Btu per hour. For this source category, District staff proposed emission limits based on control technologies that have been achieved in practice as well as controls that are technologically feasible for retrofit to existing units. The control technology that would likely be installed to achieve the proposed emission limits is Ultra Low NOx burner (ULNB) system with or without flue gas recirculation. However, in cases where ULNB is not appropriate, the unit may have to be retrofitted with combustion gas controls such as selective catalytic reduction (SCR), nonselective catalytic reduction (SNCR), or Low Temperature Oxidation (LoTOx).

The tiered implementation schedule (June 1, 2005, June 1, 2006, and June 1, 2007) for the proposed controls has been designed to achieve the maximum reductions yet provide a reasonable amount of time to design and install the required controls. The emission limits for each implementation schedule is the same.

The District's 2005 NOx emissions from the boilers, steam generators, and process heaters are estimated at 14.1 tons per day. District staff expects implementation of Rule 4306 to reduce NOx emissions by 8.15 tons per day.

7. Other Agencies Whose Approvals Is Required and Permits Needed:

No other agencies have discretionary authority over this project.

8. Project Compatibility with Existing Zones and Plans:

Adoption of these amendments to existing Rules 4305 and 4351, and adoption of Rule 4306 will not affect any land use zones or plans.

9. Name of Person Who Prepared Initial Study:

Hector R. Guerra
Senior Air Quality Planner

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B. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by the proposed project, involving at least one impact that is a "Potentially Significant Impact" or "Potentially Significant Unless Mitigated", as indicated by the checklist on the following pages.

- | | |
|--|---|
| <input type="checkbox"/> Land Use and Planning | <input type="checkbox"/> Population and Housing |
| <input type="checkbox"/> Geophysical | <input type="checkbox"/> Water |
| <input type="checkbox"/> Air Quality | <input type="checkbox"/> Transportation/Circulation |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Energy and Mineral Resources |
| <input type="checkbox"/> Hazards | <input type="checkbox"/> Noise |
| <input type="checkbox"/> Public Services | <input type="checkbox"/> Utilities and Service Systems |
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Cultural Resources |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Mandatory Findings of Significance |

C. DETERMINATION

I certify that this document reflects the independent judgment of the District.

 X I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

 I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION will be prepared.

 I find that the proposed project may have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

 I find that the proposed project MAY have a significant effect(s) on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets, if the effect is a "potentially significant impact" or "potentially significant unless mitigated." An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

Signature: _____ Date: _____

Printed name: _____

Title: _____

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D. ENVIRONMENTAL IMPACT CHECKLIST

Explanations of all answers on the checkoff list are located in Section E.

	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
I. Geologic Problems: <i>Would the proposal result in or expose people to potential impacts involving:</i>				
a) Fault rupture?				X
b) Seismic ground shaking?				X
c) Seismic ground failure, including liquefaction?				X
d) Seiche, tsunami, or volcanic hazard?				X
e) Landslides or mudflows?				X
f) Erosion, changes in topography or unstable soil conditions from excavation, grading, or fill?				X
g) Subsidence of the land?				X
h) Expansive soils?				X
i) Unique geologic or physical features?				X
II. Air Quality. <i>Would the proposal:</i>				
a) Violate any air quality standard or contribute to an existing or projected air quality violation?				X
b) Expose sensitive receptors to pollutants?				X
c) Alter air movement, moisture, or temperature, or cause any change in climate?				X
d) Create objectionable odors?				X
III. Water. <i>Would the proposal result in:</i>				
a) Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?				X
b) Exposure of people or property to water related hazards such as flooding?				X
c) Discharge into surface water or other alteration of surface water quality (e.g., temperature, dissolved oxygen or turbidity)?				X
d) Changes in the amount of surface water in any water body?				X
e) Changes in currents, or the course or direction of water movements?				X
f) Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations, or through substantial loss of groundwater recharge capability?				X

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	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
g) Altered direction or rate of flow of ground waters?				X
h) Impacts to groundwater quality?				X
i) Substantial reduction in the amount of water otherwise available for public water supplies?				X
IV. Biological Resources <i>Would the proposal result in impacts to:</i>				
a) Endangered, threatened, or rare species or their habitats (including but not limited to plants, fish, insects, animals, and birds)?				X
b) Locally designated species (e.g., heritage trees)?				X
c) Locally designated natural communities (e.g., oak forest, coastal habitat, etc.)?				X
d) Wetland habitat (e.g., marsh, riparian, and vernal pool)?				X
e) Wildlife dispersal or migration corridors?				X
V. Noise. <i>Would the proposal result in:</i>				
a) Increases in existing noise levels?				X
b) Exposure of people to severe noise levels?				X
VI. Land Use and Planning. <i>Would the proposal:</i>				
a) Conflict with general plan designation or zoning?				X
b) Conflict with applicable environmental plans or policies adopted by agencies with jurisdiction over the project?				X
c) Be incompatible with existing land use in the vicinity?				X
d) Affect agricultural resources or operations (e.g., impacts to soils or farmlands, or impacts from incompatible land uses)?				X
e) Disrupt or divide the physical arrangement of an established community (including a low-income or minority community)?				X
VII. Energy and Mineral Resources. <i>Would the proposal:</i>				
a) Conflict with adopted energy conservation plans?				X
b) Use non-renewable resources in a wasteful and inefficient manner?				X
c) Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the State?				X

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VIII. Hazards *Would the proposal involve:*

- a) A risk of accidental explosion or release of hazardous substances (including, but not limited to: oil, pesticides, chemicals, or radiation)?
- b) Possible interference with an emergency response plan or an emergency evacuation plan?
- c) The creation of any health hazard or potential health hazard?
- d) Exposure of people to existing sources of potential health hazards?
- e) Increased fire hazard in areas with flammable brush, grass, or trees?

IX. Population and Housing. *Would the proposal:*

- a) Cumulatively exceed official regional or local population projections?
- b) Induce substantial growth in an area either directly or indirectly (e.g. through projects in an undeveloped area or extension of major infrastructure)?
- c) Displace existing housing, especially affordable housing?

X. Transportation/Circulation *Would the proposal result in:*

- a) Increased vehicle trips or traffic congestion?
- b) Hazards to safety from design features (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. , farm equipment)?
- c) Inadequate emergency access or access to nearby uses?
- d) Insufficient parking capacity on-site or off-site?
- e) Hazards or barriers for pedestrians or bicyclists?
- f) Conflicts with adopted policies supporting alternative transportation (e.g., bus turnouts, bicycle racks)?
- g) Rail, waterborne or air traffic impacts?

XI. Public Services. *Would the proposal affect, or result in a need for new or altered governmental services in any of the following areas:*

- a) Fire protection?
- b) Police protection?
- c) Schools?
- d) Parks or other recreational facilities?
- e) Maintenance of public facilities, including roads?
- f) Other governmental services?

Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
		X	
			X
			X
			X
			X
			X
			X
			X
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			X
			X
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			X
			X
			X
			X
			X

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XVI. Mandatory Findings of Significance

- a) **Potential to degrade:** Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?
- b) **Short-term:** Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively, brief, definitive period of time. Long-term impacts will endure well into the future.)
- c) **Cumulative:** Does the project have impacts which are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)
- d) **Substantial adverse:** Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
			X
			X
			X
			X

San Joaquin Valley Unified Air Pollution Control District

Attachment "A"

COMMENTS TO ENVIRONMENTAL CHECKLIST

Project Name: Proposed Amendments to Rule 4351 (Boilers, Steam Generators, and Process Heaters – Phase 1), Rule 4305 (Boilers, Steam Generators, and Process Heaters – Phase 2), and New Rule 4306 (Boilers, Steam Generators, and Process Heaters – Phase 3)

E. ENVIRONMENTAL IMPACT CHECKLIST COMMENTS

I. Geologic Problems

The proposed rule amendments may require some facilities to alter their existing facilities to accommodate additional emission control equipment. There are no provisions in the proposed rule or amendments that would call for a significant disruption or over-covering of soil, changes in topography or surface relief features, the erosion of beach sand, or a change in existing siltation rates. The proposed project will not increase the exposure of people or property to geologic hazards.

II. Air Quality

The San Joaquin Valley Air Basin is classified as a severe ozone nonattainment area and a serious particulate matter 10 microns in size (PM10) nonattainment area for the health-based air quality standards established by the federal Clean Air Act. The San Joaquin Valley Unified Air Pollution Control District is considering downgrading the ozone classification to extreme nonattainment. The serious PM10 classification and the extreme ozone classification are the worst possible categories. Nitrogen oxides (NOx) is a precursor to both ozone and PM10. It is expected that the use of NOx emission control devices will have positive effects on the air quality of the Valley. It is anticipated that some increased emissions of ammonia will result from the use of Selective Catalytic Reduction (SCR) control systems for some units that could not achieve the emission limits in the rule by installing Ultra Low NOx Burner (ULNB). The amount of ammonia emissions is assumed to be a small fraction of the amount of NOx which is controlled and that the large, net, positive air quality benefit outweighs the small increase in fugitive ammonia emissions.

III. Water

The operation of ULNB or SCR would not require the use of water. Therefore, there is no expected adverse impact on existing water resources or the need to

explore new water resources as a result of adopting the proposed project in the San Joaquin Valley.

IV. Biological Impacts

The proposed project is not expected to adversely affect existing plant or animal species or communities, unique or endangered plant or animal species, or agricultural crops. No additional significant adverse impacts to biological resources are expected to result from the proposed project because proposed rules are expected to affect existing facilities in industrial or commercial areas where biological resources are already disturbed. Further, improvements in air quality expected from proposed rules are expected to provide health benefits to plant and animal species as well as the human residents in the District.

V. Noise

The retrofitting of existing units (boilers, steam generators, and process heaters) with ULNB and/or SCR systems is not expected to result in significant noise impacts. The units operate mainly in industrial settings where noise levels are already high. Existing units typically generate a certain amount of noise and any increase in noise associated with the installation of add-on control equipment is expected to be negligible.

VI. Land Use and Planning

There are no provisions in the proposed rule or amendments that would affect land use plans, policies, or regulations. It is also expected that the proposed rule or amendments will not affect infrastructure development or require changes to existing zone designations because the proposed amendments primarily regulate equipment at existing facilities. Local governments determine land use and other planning considerations, and no land use or planning requirements will be altered by amending the NO_x emission limits from boilers, steam generators, and process heaters. Therefore, present or planned land uses in the region will not be affected as a result of the proposed amended rule.

VII. Energy and Mineral Resources

The operation of ULNB with flue gas recirculation or SCR systems will require electrical power for fans, electronics and control motors. The power consumption of these control systems is expected to have less than significant impact on existing power resources.

VIII. Hazards

It is anticipated that in some units, the operators may need to install and operate SCR control systems to comply with the proposed emission limits. SCR is known to cause an increase in ammonia emissions, or ammonia slip, under some circumstances. The levels of ammonia emissions from potential ammonia slip are not expected to reach hazardous levels, and the emission levels can be reduced by properly operating and maintaining the equipment.

Ammonia transportation vessels, handling equipment, and storage tanks must comply with state and local safety regulations that minimize the potential for accidental release. Some SCR systems can also use non-hazardous urea or aqueous ammonia injection to achieve the proposed emission limits without anhydrous ammonia.

Certain catalysts may contain hazardous materials that must be properly disposed of at the end of their useful life. Existing waste disposal regulations are considered to be adequate to prevent a significant impact from occurring.

IX. Population and Housing

The proposed rule or amendments merely modify the NOx emission limits of existing boilers, steam generators, and process heaters. There are no provisions in the proposed rules that would result in the creation of any industry that would effect population growth, or directly or indirectly induce the construction of single- or multiple-family units. No population relocation or growth inducement is expected from the amended rules implementation.

X. Transportation and Circulation

The proposed rule or amendments will not increase the amount of businesses operating units (boilers, steam generators, and process heaters) in the District. Further, the proposed rule or amendments will not cause a substantial increase in transport trips to deliver ammonia because it is anticipated that only few existing units would use SCR. The delivery of anhydrous ammonia for the SCR system is already occurring at some existing facilities throughout the Valley which currently use ammonia injection systems. Deliveries are also made to agricultural sources which use ammonia as a soil amendment fertilizer. Assuming a maximum of two trips per week per facility and the fact that there may only be two to three facilities would likely use SCR to comply with the emission limits of the rule, the estimated deliveries is a total of only four to six additional trips per week throughout the Valley.

XI. Public Services

The proposed rule or amendments are expected to result in the increased use of ammonia as a catalytic reagent. Ammonia is a colorless gas with a pungent suffocating odor and is corrosive to the skin, eyes, and lungs. Prolonged contact at concentrations greater than 300 ppm can cause permanent injury or death. Fortunately, ammonia has a low odor threshold (20 ppm), so most people will seek relief at much lower concentrations. Ammonia does not meet the Department of Transportation (DOT) definition of a Flammable Gas but is flammable at concentrations of 15 to 28% by volume in air. Because of state-mandated safety requirements in the transportation and handling of ammonia, the District does not anticipate an adverse impact to fire department services.

XII. Utilities and Service Systems

The operation of ULNB with flue gas recirculation (FGR) or SCR systems will require electrical energy for fans, electronics and control motors. Currently, most of the boilers, steam generators, and process heaters are already operating FGR in conjunction with low NOx burner control system. Units that would employ ultra low NOx burner control system may need to increase the FRG fans to achieve a higher flue gas recirculation rate. The electricity consumption of these control systems may increase slightly from the current consumption level, but it will not result in any demand for new utilities or service systems, or result in any substantial demand on existing sources.

XIII. Aesthetics

The proposed rule or amendments are not expected to adversely affect or change land use in the District. The proposed rule or amendments will not require any changes in the physical environment that would obstruct any scenic vistas or views of interest to the public. The proposed rules would not create aesthetically offensive sites visible to the public. No significant adverse aesthetic or recreation impacts are expected from the proposed rule amendments.

XIV. Recreation

No recreational facilities or resources in the District are expected to be adversely affected. These conclusions are based on the fact that any physical changes would occur at existing industrial or commercial sites. No significant adverse aesthetic or recreation impacts are expected from the proposed rule amendments.

XV. Cultural Resources

As previously noted, any effect from implementing the proposed rule or amendments will occur at existing facilities in commercial/industrial areas. As a result, significant impacts to cultural resources are not expected because proposed amendments to Rules 4305 and 4351, and new Rule 4306 will not require the destruction of existing buildings or sites with prehistoric, historic, archaeological, religious, or ethnic significance. The proposed rule amendments are, therefore, not anticipated to result in any activities or promote any programs, which could have a significant adverse impact on cultural resources within the District.

XVI. Mandatory Findings of Significance

- a. The project does not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory.
- b. The project does not have the potential to achieve short-term, to the disadvantage of long-term, environmental goals.
- c. The project does not have impacts, which are individually limited, but cumulatively considerable.
- d. The project does not have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly.

**EXHIBIT 1
MAP OF DISTRICT BOUNDARIES**

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT



EXIHIBIT 1
MAP OF SAN JOAQUIN
VALLEY UNIFIED AIR
POLLUTION CONTROL
DISTRICT
BOUNDARIES