Are You Ready for the May 1st Deadline?

Review of the Authority to Construct and Supplemental Application Form

R.F. MacDonald Co.
your boiler & pump solutions team

Mike Kheir & Tim Brouwer

Introductions

Mike Kheir
Boiler Sales Engineer – Modesto Area
Bachelor of Science - Mechanical Engineering
13 years in the pump industry - Municipal, Oil & Gas
1.5 years in the boiler industry (replaced Doug Vickery last year)

Tim Brouwer
Boiler Sales Engineer – Fresno
Bachelor of Science – Mechanical Engineering
5.5 years in the boiler industry

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Applicability

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

- Central Valley Counties
- Applies to:
  - Boilers
  - Steam Generators
  - Process Heaters
- Sizes >5 MMBtu/hr
- Approximately 1,273 units effected
- First deadline is May 1, 2022
- Compliance with both rules 4306 and 4320 is required

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Applicable Rule Overview

- Rule 4306: Boilers, Steam Generators, and Process Heaters > 5 MMBtu/hr (amended 12/17/2020)
- Rule 4320: Advanced Emission Reduction
  - Options for Boilers, Steam Generators, and Process Heaters > 5 MMBtu/hr (amended 12/17/2020)
- If you have any further questions, please reference our previous presentations on our Website:
  - https://www.rfmacdonald.com/clear-the-air/

Rule 4306 – NOx and CO Limits

- Tier 2 NOx limits are listed in Table 2 and vary between 5 and 30 ppmv depending on applicable category

Category A (≤ 20.0 MMBtu/hr)	Operated on Gaseous Fuel	
	NOx Limit	CO Limit (ppmv)
Fire Tube Boilers	7 ppmv or 0.0085 lb/MMBtu	400
Units at Schools Units fired on Digester Gas Thermal Fluid Heaters All other units	9 ppmv or 0.011 lb/MMBtu	
Category B (> 20.0 MMBtu/hr)	NOx Limit	CO Limit (ppmv)
All units with a heat input > 20.0 MMBtu/hour and ≤ 75 MMBtu/hour	7 ppmv or 0.0085 lb/MMBtu	400
Units with a heat input > 75 MMBtu/hour	5 ppmv or 0.0061 lb/MMBtu	
Category E ("Low Use" Units)	NOx Limit	CO Limit (ppmv)
Units limited by a Permit to Operate to an annual heat input of 9 billion Btu/year to 30 billion Btu/year	30 ppmv or 0.036 lb/MMBtu	400

Rule 4306 – Tier 2: Compliance Schedule

- The compliance date depends on size and type of unit and current NOx emission limit

Category A (≤ 20.0 MMBtu/hr)	Emission Control Plan	Authority to Construct	Compliance Deadline
Fire Tube Units permitted > 9 ppmv	May 1, 2022	May 1, 2022	December 31, 2023
Units at Schools			
Units fired on Digester Gas			
Thermal Fluid Heaters			
All other units permitted > 12 ppmv			
Fire Tube Units permitted ≤ 9 ppmv	May 1, 2028	May 1, 2028	December 31, 2029
All other units permitted ≤ 12 ppmv			

Rule 4306 – Tier 2: Compliance Schedule

Category B (> 20.0 MMBtu/hr)	Emission Control Plan	Authority to Construct	Compliance Deadline
Units with a heat input > 20.0 MMBtu/hour and ≤ 75 MMBtu/hour permitted greater than 9 ppmv	May 1, 2022	May 1, 2022	December 31, 2023
Units with a heat input > 75 MMBtu/hour permitted greater than 7 ppmv			
Units with a heat input > 20.0 MMBtu/hour and ≤ 75 MMBtu/hour permitted less than or equal to 9 ppmv	May 1, 2028	May 1, 2028	December 31, 2029
Units with a rated heat input > 75 MMBtu/hour permitted less than or equal to 7 ppmv			
Category E ("Low Use" Units)	**Emission Control Plan**	**Authority to Construct**	**Compliance Deadline**
Units limited by PTO an annual heat input of 9 billion Btu/year to 30 billion Btu/year	May 1, 2022	May 1, 2022	December 31, 2023

Rule 4320 – NOx and CO Limits – Option 1

- Tier 2 NOx limits are listed in Table 2 and vary between 2.5 and 9 ppmv depending on applicable category
- CO emissions shall not exceed 400 ppmv

Category A (≤ 20.0 MMBtu/hr)	NOx Limit	Emission Control Plan	Authority to Construct	Compliance Deadline
Fire Tube Boilers and others not listed below	5 ppmv or 0.0061 lb/MMBtu	May 1, 2022	May 1, 2022	December 31, 2023
Units at Schools, Units fired on DG, Thermal Fluid Heaters	9 ppmv or 0.011 lb/MMBtu	May 1, 2022	May 1, 2022	December 31, 2023
Category B (> 20.0 MMBtu/hr)	NOx Limit	Emission Control Plan	Authority to Construct	Compliance Deadline
All units	2.5 ppmv or 0.003 lb/MMBtu	May 1, 2022	May 1, 2022	December 31, 2023
Category E ("Low Use" Units)	NOx Limit	Emission Control Plan	Authority to Construct	Compliance Deadline
Annual heat input limited to >1.8 billion Btu/year but ≤ 30 billion Btu/year	9 ppmv or 0.011 lb/MMBtu	May 1, 2022	May 1, 2022	December 31, 2023

Emission Control Plan (ECP) Requirements

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

Rule 4306/4320 Compliance Application/Emission Control Plan Form

San Joaquin Valley Air Pollution Control District sent this bulletin at 03/09/2022 05:36 PM PST

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San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

District Rules 4306 and 4320 (Boilers, Steam Generators, and Process Heaters)

Rule Compliance Application Form/Emission Control Plan Form

The San Joaquin Valley Air Pollution Control District has created a specific Rule Compliance Supplemental Application form/Emission Control Plan form for District Rules 4306 and 4320, which, together with an Authority to Construct application form, must be submitted by the dates specified in the respective Compliance Schedules in each rule. For additional information, please click the links below:

- Authority to Construct Application Form
- District Rule 4306/4320 Supplemental Application/Emission Control Plan Form
- District Rule 4306
- District Rule 4320

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Permit Application Forms

- Permit Application Forms are available on the district's website
  - ❑ Permit Application Form: http://www.valleyair.org/busind/pto/ptoforms/ATCappformJul2019.pdf
- Submit these forms along with ECP by the dates mentioned earlier

Permit Application Form Checklist

San Joaquin Valley Air Pollution Control District

www.valleyair.org

Checklist for Permit Applications:

To avoid unnecessary delays, please review the following checklist before submitting your Authority to Construct/Permit to Operate Application.

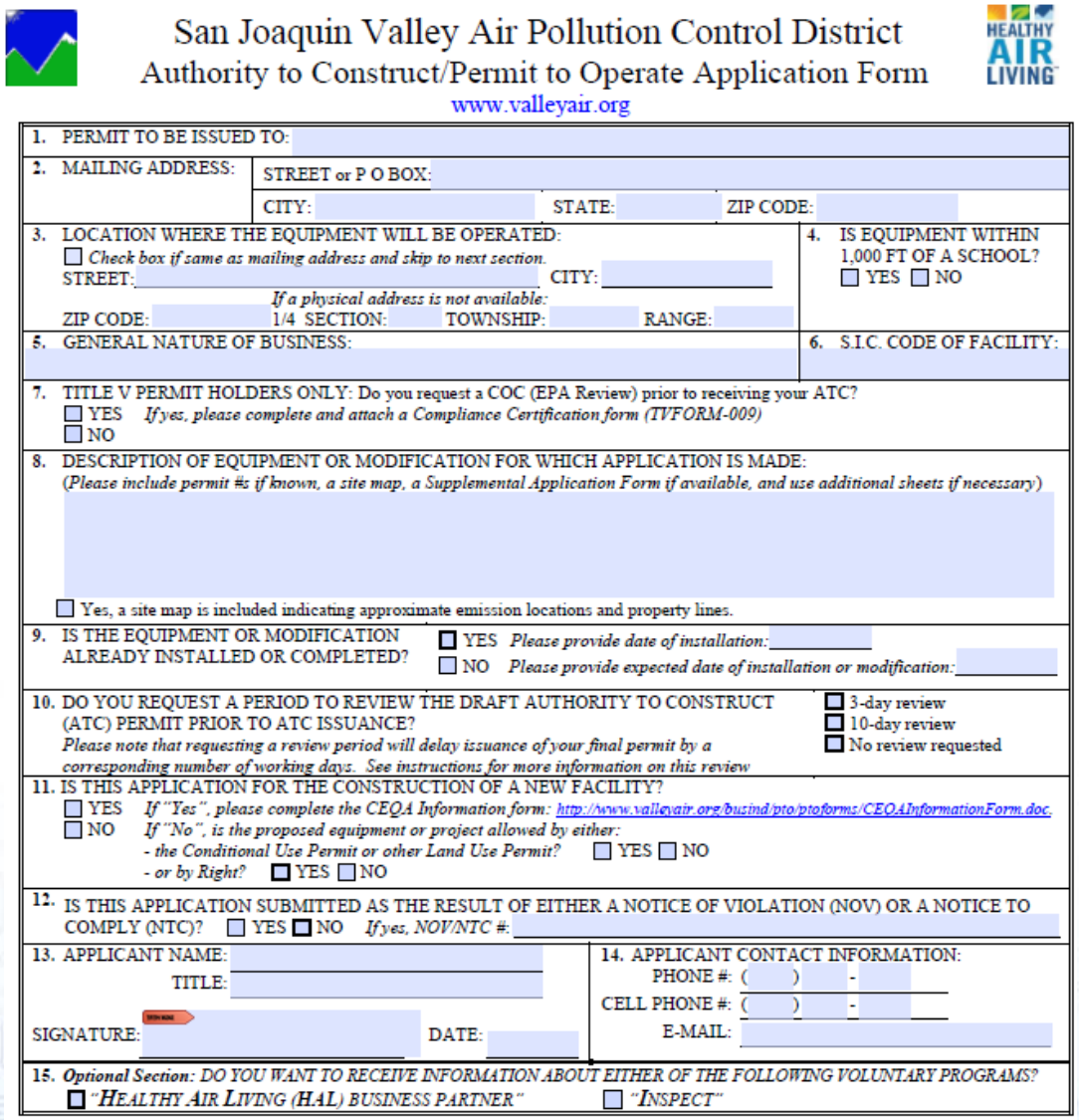
Checklist for Complete Applications (include the following)	
☐	1. A signed Authority to Construct/Permit to Operate Application.
☐	2. Include a site map that identifies the location(s) where the new/modified unit(s) will operate and the approximate property lines. This is required for any proposal for new equipment, an increase in emissions from existing units, or change in location of emission points.
☐	3. Any applicable supplemental application forms. Supplemental application forms can be found here: http://www.valleyair.org/busind/pto/ptoforms/1ptoformidx.htm
☐	4. Equipment listing (including a list of electric motors with hp rating).
☐	5. Include a short project description, including a process flow schematic identifying emission points.
☐	6. Process parameters (describe throughput, operating schedule, fuel rate, raw material usage, etc.).
☐	7. Identify control equipment/technology.
☐	8. Any additional information required to calculate emissions.
☐	9. $87 filing fee for each permit unit. *Note: Permit application processing time will be billed at the applicable District hourly labor rate*

Detailed Authority to Construct (ATC) and Permit to Operate (PTO) Application Instructions can be found here:

PDF Format: http://www.valleyair.org/busind/pto/ptoforms/atcappinstruct.pdf
Word Format: http://www.valleyair.org/busind/pto/ptoforms/WordDocs/atcappinstruct.doc

Applications may be submitted either by mail or in person at any of the regional offices listed below. The District is pleased to provide businesses with assistance in all aspects of the permitting process. Any business is welcome to call the **Small Business Assistance (SBA) Hotline** or to visit the SBA Office located in each of the regional offices. No appointment is necessary. For more information, please call the SBA Hotline serving the county in which your business is located.

Permit Application Form



San Joaquin Valley Air Pollution Control District
Authority to Construct/Permit to Operate Application Form
www.valleyair.org

1. PERMIT TO BE ISSUED TO:
2. MAILING ADDRESS: STREET or P O BOX: CITY: STATE: ZIP CODE:
3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED:
☐ *Check box if same as mailing address and skip to next section.*
STREET: CITY:
If a physical address is not available:
ZIP CODE: 1/4 SECTION: TOWNSHIP: RANGE:
4. IS EQUIPMENT WITHIN 1,000 FT OF A SCHOOL? ☐ YES ☐ NO
5. GENERAL NATURE OF BUSINESS:
6. S.I.C. CODE OF FACILITY:
7. TITLE V PERMIT HOLDERS ONLY: Do you request a COC (EPA Review) prior to receiving your ATC?
☐ YES *If yes, please complete and attach a Compliance Certification form (TVFORM-009)*
☐ NO
8. DESCRIPTION OF EQUIPMENT OR MODIFICATION FOR WHICH APPLICATION IS MADE:
(Please include permit #s if known, a site map, a Supplemental Application Form if available, and use additional sheets if necessary)
☐ Yes, a site map is included indicating approximate emission locations and property lines.
9. IS THE EQUIPMENT OR MODIFICATION ALREADY INSTALLED OR COMPLETED?
☐ YES *Please provide date of installation:*
☐ NO *Please provide expected date of installation or modification:*
10. DO YOU REQUEST A PERIOD TO REVIEW THE DRAFT AUTHORITY TO CONSTRUCT (ATC) PERMIT PRIOR TO ATC ISSUANCE?
Please note that requesting a review period will delay issuance of your final permit by a corresponding number of working days. See instructions for more information on this review
☐ 3-day review
☐ 10-day review
☐ No review requested
11. IS THIS APPLICATION FOR THE CONSTRUCTION OF A NEW FACILITY?
☐ YES *If "Yes", please complete the CEQA Information form: http://www.valleyair.org/busind/pto/ptoforms/CEQAInformationForm.doc.*
☐ NO *If "No", is the proposed equipment or project allowed by either:*
- the Conditional Use Permit or other Land Use Permit? ☐ YES ☐ NO
- or by Right? ☐ YES ☐ NO
12. IS THIS APPLICATION SUBMITTED AS THE RESULT OF EITHER A NOTICE OF VIOLATION (NOV) OR A NOTICE TO COMPLY (NTC)? ☐ YES ☐ NO *If yes, NOV/NTC #:*
13. APPLICANT NAME:
TITLE:
SIGNATURE: DATE:
14. APPLICANT CONTACT INFORMATION:
PHONE #: ( ) -
CELL PHONE #: ( ) -
E-MAIL:
15. *Optional Section: DO YOU WANT TO RECEIVE INFORMATION ABOUT EITHER OF THE FOLLOWING VOLUNTARY PROGRAMS?*
☐ *"HEALTHY AIR LIVING (HAL) BUSINESS PARTNER"* ☐ *"INSPECT"*

Supplemental Application Form

- This form is available on the District's website:
  - Supplemental Application Form / Emission Control Plan: http://www.valleyair.org/busind/pto/ptoforms/R4306-R4320-Compliance-Application-Form.pdf
- This form is for existing units subject to the Tier 2 emission limits of Rules 4306 and Rule 4320.
- In addition to this supplemental form, a complete Authority to Construct Application is required by May 1, 2022.
- One form must be completed for each non-identical unit, so you will need to note if form covers multiple identical units.

Supplemental Application Form

- For Existing Units
  - including Emissions Controls Plan
- One application per unit
- One emission control plan per unit
  - Example: 3 boilers need 3 boiler emissions control plans

Supplemental Application Form / Emission Control Plan

Boilers, Steam Generators, and Process Heaters

> 5.0 MMBtu/hr, Gaseous and Liquid Fueled

Compliance with Rule 4306/4320 (12/17/20 amendments)

Note: *This form is for existing units subject to the Tier 2 emission limits of Rules 4306 and Rule 4320. In addition to this supplemental form, a complete Authority to Construct Application is required by May 1, 2022. Please complete one form for each non-identical unit; note if form covers multiple identical units.*

FACILITY NAME:		
FACILITY ID NUMBER:		
IDENTIFY THE PERMIT NUMBER(S):		
UNIT DETAILS	MANUFACTURER:	MODEL:
	SERIAL NUMBER:	
	BURNER 1	**BURNER 2** (IF APPLICABLE)
	MANUFACTURER:	
	MODEL:	
	SERIAL NUMBER:	
	MAX HEAT INPUT RATING (FROM DATAPLATE): MMBTU/HR	MAX HEAT INPUT RATING (FROM DATAPLATE): MMBTU/HR
TIER 2 CATEGORY	IDENTIFY APPLICABLE TIER 2 CATEGORY: (see Table 2 in Rules 4306 and Rule 4320 for category definitions and limits) District Rule 4306: http://www.valleyair.org/rules/currntrules/r4306.pdf District Rule 4320: http://www.valleyair.org/rules/currntrules/r4320.pdf	
EMISSION CONTROL MODIFICATIONS	**PROPOSED EMISSION CONTROL MODIFICATIONS** ☐ NONE. CURRENTLY IN COMPLIANCE ☐ TUNE EXISTING BURNER SYSTEM ☐ BURNER SYSTEM MODIFICATION/REPLACEMENT ☐ SELECTIVE CATALYTIC REDUCTION	
	4306 COMPLIANCE ☐ CURRENTLY IN COMPLIANCE ☐ MODIFY CONTROLS (DESCRIBED ABOVE) ☐ OTHER (EXPLAIN):	**4320 COMPLIANCE** ☐ CURRENTLY IN COMPLIANCE ☐ MODIFY CONTROLS (DESCRIBED ABOVE) ☐ ELECT TO PAY ANNUAL EMISSIONS FEE PER §5.1.2

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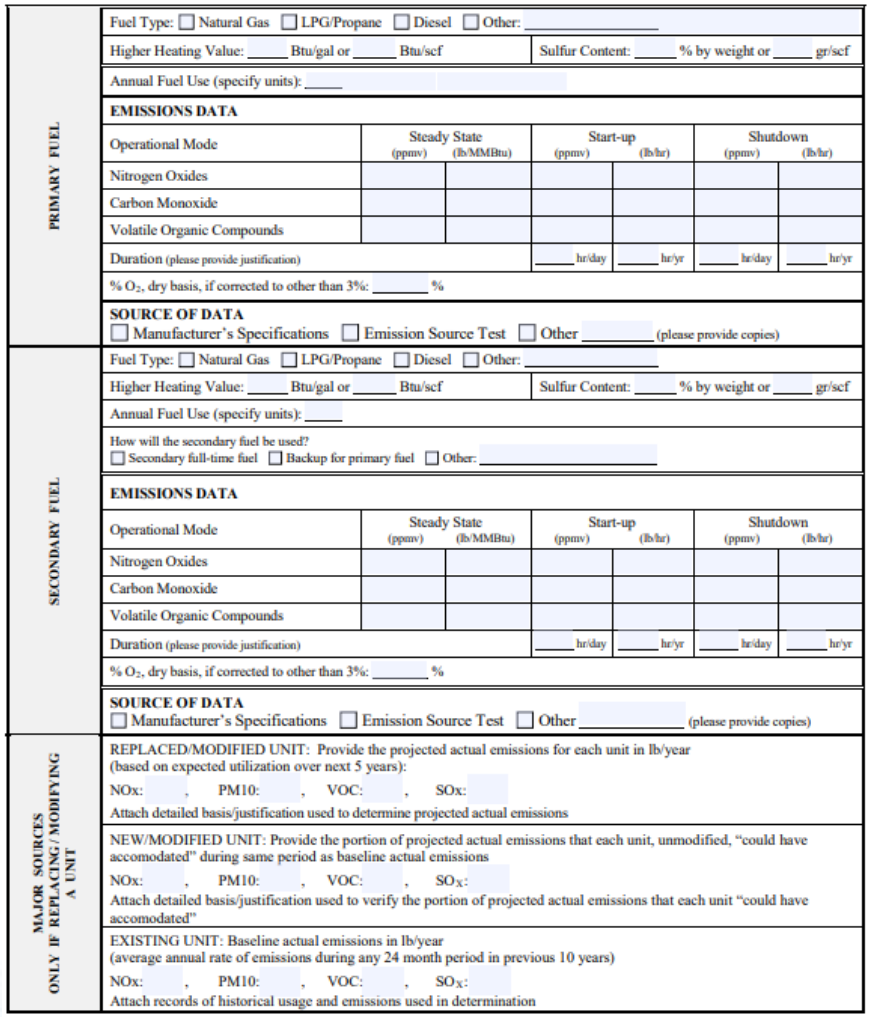
Supplemental Application Form

- For Existing Units
  - including Emissions Controls Plan
- One application per unit
- One emission control plan per unit
  - Example: 3 boilers need 3 boiler emissions control plans
- Needs to be performed by third party source test company



PRIMARY FUEL

Fuel Type: ☐ Natural Gas ☐ LPG/Propane ☐ Diesel ☐ Other: _____

Higher Heating Value: _____ Btu/gal or _____ Btu/scf | Sulfur Content: _____ % by weight or _____ gr/scf

Annual Fuel Use (specify units): _____

EMISSIONS DATA

Operational Mode	Steady State (ppmv)	Steady State (lb/MMBtu)	Start-up (ppmv)	Start-up (lb/hr)	Shutdown (ppmv)	Shutdown (lb/hr)
Nitrogen Oxides						
Carbon Monoxide						
Volatile Organic Compounds						
Duration (please provide justification)			_____ hr/day	_____ hr/yr	_____ hr/day	_____ hr/yr

% O_2, dry basis, if corrected to other than 3%: _____ %

SOURCE OF DATA
☐ Manufacturer's Specifications ☐ Emission Source Test ☐ Other _____ (please provide copies)

SECONDARY FUEL

Fuel Type: ☐ Natural Gas ☐ LPG/Propane ☐ Diesel ☐ Other: _____

Higher Heating Value: _____ Btu/gal or _____ Btu/scf | Sulfur Content: _____ % by weight or _____ gr/scf

Annual Fuel Use (specify units): _____

How will the secondary fuel be used?
☐ Secondary full-time fuel ☐ Backup for primary fuel ☐ Other: _____

EMISSIONS DATA

Operational Mode	Steady State (ppmv)	Steady State (lb/MMBtu)	Start-up (ppmv)	Start-up (lb/hr)	Shutdown (ppmv)	Shutdown (lb/hr)
Nitrogen Oxides						
Carbon Monoxide						
Volatile Organic Compounds						
Duration (please provide justification)			_____ hr/day	_____ hr/yr	_____ hr/day	_____ hr/yr

% O_2, dry basis, if corrected to other than 3%: _____ %

SOURCE OF DATA
☐ Manufacturer's Specifications ☐ Emission Source Test ☐ Other _____ (please provide copies)

ONLY IF REPLACING/MODIFYING A UNIT — MAJOR SOURCES

REPLACED/MODIFIED UNIT: Provide the projected actual emissions for each unit in lb/year
(based on expected utilization over next 5 years):
NOx: , PM10: , VOC: , SOx:
Attach detailed basis/justification used to determine projected actual emissions

NEW/MODIFIED UNIT: Provide the portion of projected actual emissions that each unit, unmodified, "could have accomodated" during same period as baseline actual emissions
NOx: , PM10: , VOC: , SO_X:
Attach detailed basis/justification used to verify the portion of projected actual emissions that each unit "could have accomodated"

EXISTING UNIT: Baseline actual emissions in lb/year
(average annual rate of emissions during any 24 month period in previous 10 years)
NOx: , PM10: , VOC: , SO_X:
Attach records of historical usage and emissions used in determination

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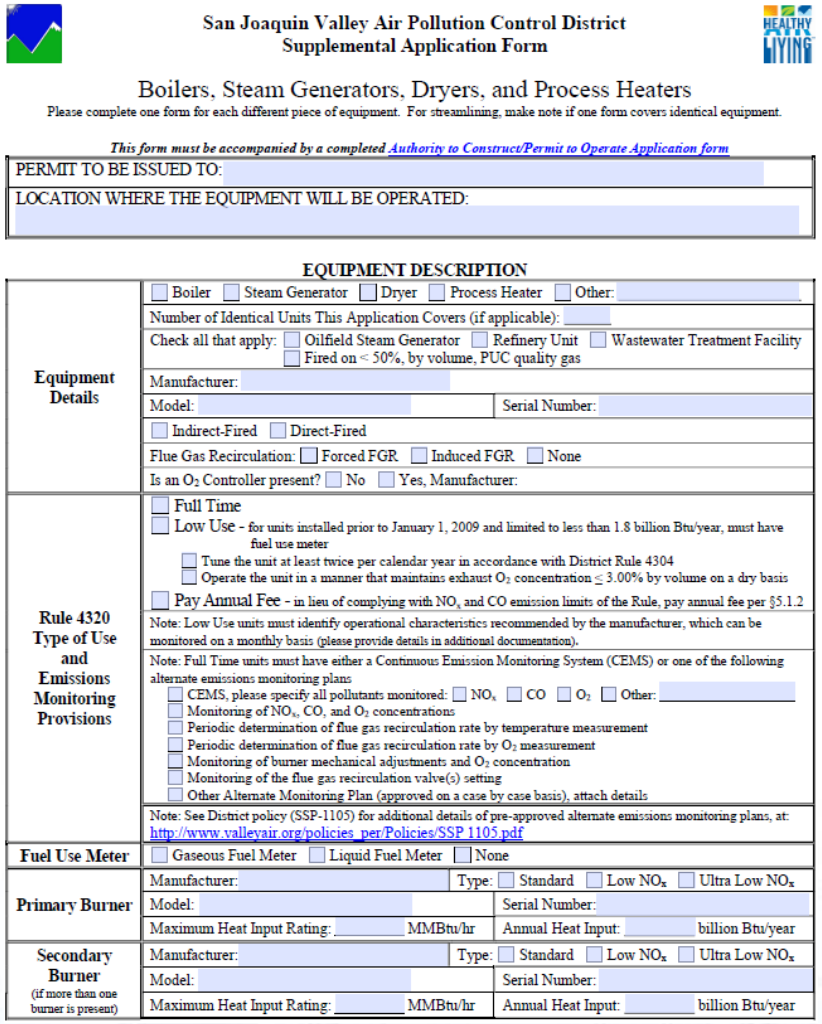
Supplemental Application Form

- For New Units
  - including Emissions Controls Plan
- Must meet NOx emissions requirement on Rule 4320
- There is no annual emission fee option



San Joaquin Valley Air Pollution Control District
Supplemental Application Form

Boilers, Steam Generators, Dryers, and Process Heaters

Please complete one form for each different piece of equipment. For streamlining, make note if one form covers identical equipment.

This form must be accompanied by a completed Authority to Construct/Permit to Operate Application form

PERMIT TO BE ISSUED TO:

LOCATION WHERE THE EQUIPMENT WILL BE OPERATED:

EQUIPMENT DESCRIPTION

Equipment Details	☐ Boiler ☐ Steam Generator ☐ Dryer ☐ Process Heater ☐ Other:
	Number of Identical Units This Application Covers (if applicable):
	Check all that apply: ☐ Oilfield Steam Generator ☐ Refinery Unit ☐ Wastewater Treatment Facility ☐ Fired on < 50%, by volume, PUC quality gas
	Manufacturer:
	Model: Serial Number:
	☐ Indirect-Fired ☐ Direct-Fired
	Flue Gas Recirculation: ☐ Forced FGR ☐ Induced FGR ☐ None
	Is an O_2 Controller present? ☐ No ☐ Yes, Manufacturer:
Rule 4320 Type of Use and Emissions Monitoring Provisions	☐ Full Time ☐ Low Use - for units installed prior to January 1, 2009 and limited to less than 1.8 billion Btu/year, must have fuel use meter ☐ Tune the unit at least twice per calendar year in accordance with District Rule 4304 ☐ Operate the unit in a manner that maintains exhaust O_2 concentration ≤ 3.00% by volume on a dry basis ☐ Pay Annual Fee - in lieu of complying with NO_x and CO emission limits of the Rule, pay annual fee per §5.1.2
	Note: Low Use units must identify operational characteristics recommended by the manufacturer, which can be monitored on a monthly basis (please provide details in additional documentation).
	Note: Full Time units must have either a Continuous Emission Monitoring System (CEMS) or one of the following alternate emissions monitoring plans ☐ CEMS, please specify all pollutants monitored: ☐ NO_x ☐ CO ☐ O_2 ☐ Other: ☐ Monitoring of NO_x, CO, and O_2 concentrations ☐ Periodic determination of flue gas recirculation rate by temperature measurement ☐ Periodic determination of flue gas recirculation rate by O_2 measurement ☐ Monitoring of burner mechanical adjustments and O_2 concentration ☐ Monitoring of the flue gas recirculation valve(s) setting ☐ Other Alternate Monitoring Plan (approved on a case by case basis), attach details
	Note: See District policy (SSP-1105) for additional details of pre-approved alternate emissions monitoring plans, at: http://www.valleyair.org/policies_per/Policies/SSP 1105.pdf
Fuel Use Meter	☐ Gaseous Fuel Meter ☐ Liquid Fuel Meter ☐ None
Primary Burner	Manufacturer: Type: ☐ Standard ☐ Low NO_x ☐ Ultra Low NO_x
	Model: Serial Number:
	Maximum Heat Input Rating: _____ MMBtu/hr Annual Heat Input: _____ billion Btu/year
Secondary Burner (if more than one burner is present)	Manufacturer: Type: ☐ Standard ☐ Low NO_x ☐ Ultra Low NO_x
	Model: Serial Number:
	Maximum Heat Input Rating: _____ MMBtu/hr Annual Heat Input: _____ billion Btu/year

Supplemental Application Form

- For New Units
  - including Emissions Controls Plan
- Must meet NOx emissions requirement on Rule 4320
- There is no annual emission fee option

EMISSIONS DATA

Note: See District BACT and District Rule 4320 requirements for applicability to proposed unit at http://www.valleyair.org/busind/pto/bact/chapter1.pdf, and http://www.valleyair.org/rules/currntrules/r4320.pdf.

Primary Fuel	Fuel Type: ☐ Natural Gas ☐ LPG/Propane ☐ Diesel ☐ Other:						
	Higher Heating Value: _____ Btu/gal or _____ Btu/scf			Sulfur Content: _____ % by weight or _____ gr/scf			
Primary Fuel Emissions Data	Operational Mode	Steady State (ppmv)	(lb/MMBtu)	Start-up (ppmv)	(lb/hr)	Shutdown (ppmv)	(lb/hr)
	Nitrogen Oxides						
	Carbon Monoxide						
	Volatile Organic Compounds						
	Duration (please provide justification)			_____ hr/day	_____ hr/yr	_____ hr/day	_____ hr/yr
	% O_2, dry basis, if corrected to other than 3%: _____ %						
Secondary Fuel	Fuel Type: ☐ Natural Gas ☐ LPG/Propane ☐ Diesel ☐ Other:						
	Higher Heating Value: _____ Btu/gal or _____ Btu/scf			Sulfur Content: _____ % by weight or _____ gr/scf			
	How will the secondary fuel be used? ☐ Secondary full-time fuel ☐ Backup for primary fuel ☐ Other:						
Secondary Fuel Emissions Data	Operational Mode	Steady State (ppmv)	(lb/MMBtu)	Start-up (ppmv)	(lb/hr)	Shutdown (ppmv)	(lb/hr)
	Nitrogen Oxides						
	Carbon Monoxide						
	Volatile Organic Compounds						
	Duration (please provide justification)			_____ hr/day	_____ hr/yr	_____ hr/day	_____ hr/yr
	% O_2, dry basis, if corrected to other than 3%: _____ %						
Source of Data	☐ Manufacturer's Specifications ☐ Emission Source Test ☐ Other _____ (please provide copies)						
Additional Emissions Control Equipment	☐ Selective Catalytic Reduction - Manufacturer: _____ Model: _____ ☐ Ammonia (NH_3) ☐ Urea ☐ Other: _____						
	☐ Non-Selective Catalytic Reduction - Manufacturer: _____ Model: _____						
	Control Efficiencies: NO_x _____ %, SO_x _____ %, PM_{10} _____ %, CO _____ %, VOC _____ %						
	☐ Other (please specify):						

HEALTH RISK ASSESSMENT DATA

Note: See Manufacturer's Specifications for Stack Parameters and Exhaust Data. All information is required.

Operating Hours	Maximum Operating Schedule: _____ hours per day, and _____ hours per year		
Receptor Data	Distance to nearest Residence	_____ feet	Distance is measured from the proposed stack location to the nearest boundary of the nearest apartment, house, dormitory, etc.
	Direction to nearest Residence	_____	Direction from the stack to the receptor, i.e. Northeast or South.
	Distance to nearest Business	_____ feet	Distance is measured from the proposed stack location to the nearest boundary of the nearest office building, factory, store, etc.
	Direction to nearest Business	_____	Direction from the stack to the receptor, i.e. North or Southwest.
Stack Parameters	Release Height	_____ feet above grade	
	Stack Diameter	_____ inches at point of release	
	Rain Cap	☐ Flapper-type ☐ Fixed-type ☐ None ☐ Other: _____	
	Direction of Flow	☐ Vertically Upward ☐ Horizontal ☐ Other: _____ ° from vert. or _____ ° from horiz.	
Exhaust Data	Flowrate: _____ acfm	Temperature: _____ °F	
Facility Location	☐ Urban (area of dense population) ☐ Rural (area of sparse population)		
	Include a facility plot plan showing the location of the stack. Please indicate North on the plot plan. For public notice projects, indicate on plot plan the facility boundaries or fence line and distance(s) from stack to boundaries.		

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Thank you,

Questions?

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New Equipment Sales Engineers