



**Utah Division of Air Quality
New Source Review Section**

Company _____
Site/Source _____
Date _____

**Form 19
Natural Gas Boilers and Liquid Heaters**

Boiler Information	
1. Boiler Manufacturer: _____	
2. Model Number: _____	3. Serial Number: _____
4. Boiler Rating: _____ (10 ⁶ Btu per Hour)	
5. Operating Schedule: _____ hours per day _____ days per week _____ weeks per year	
6. Use: <input type="checkbox"/> steam: psig _____ <input type="checkbox"/> hot water <input type="checkbox"/> other hot liquid: _____	
7. Fuels:	<input type="checkbox"/> Natural Gas <input type="checkbox"/> LPG <input type="checkbox"/> Butane <input type="checkbox"/> Methanol
	<input type="checkbox"/> Process Gas - H ₂ S content in process gas _____ grain/100cu.ft.
	<input type="checkbox"/> Fuel Oil - specify grade: _____ <input type="checkbox"/> Other, specify: _____ Sulfur content _____ % by weight Days per year during which unit is oil fired: _____
Backup Fuel	<input type="checkbox"/> Diesel <input type="checkbox"/> Natural Gas <input type="checkbox"/> LPG <input type="checkbox"/> Butane <input type="checkbox"/> Methanol <input type="checkbox"/> Other _____
8. Is unit used to incinerate waste gas liquid stream? <input type="checkbox"/> yes <input type="checkbox"/> no (Submit drawing of method of waste stream introduction to burners)	

Gas Burner Information	
9. Gas Burner Manufacturer: _____	
10. No. of Burners: _____	11. Minimum rating per burner: _____ cu. ft/hr
12. Average Load: _____%	13. Maximum rating per burner: _____ cu. ft/hr
14. Performance Guarantee (ppm dry corrected to 3% Oxygen): NO _x : _____ CO: _____ Hydrocarbons: _____	
15. Gas burner mode of control: <input type="checkbox"/> Manual <input type="checkbox"/> Automatic on-off <input type="checkbox"/> Automatic hi-low <input type="checkbox"/> Automatic full modulation	

Oil Burner Information	
16. Oil burner manufacturer: _____	
17. Model: _____	number of burners: _____ Size number: _____
18. Minimum rating per burner: _____ gal/hr	19. Maximum rating per burner: _____ gal/hr

**Form 11 - Natural Gas Boiler and Liquid Heater
(Continued)**

Modifications for Emissions Reduction

20. Type of modification: <input type="checkbox"/> Low NO _x Burner <input type="checkbox"/> Flue Gas Recirculation (FGR) <input type="checkbox"/> Oxygen Trim <input type="checkbox"/> Other (specify) _____
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For Low-NO_x Burners

21. Burner Type: <input type="checkbox"/> Staged air <input type="checkbox"/> Staged fuel <input type="checkbox"/> Internal flue gas recirculation <input type="checkbox"/> Ceramic <input type="checkbox"/> Other (specify): _____	
22. Manufacturer and Model Number: _____	
23. Rating: _____ 10 ⁶ BTU/HR	24. Combustion air blower horsepower: _____

For Flue Gas Recirculation (FGR)

25. Type: <input type="checkbox"/> Induced <input type="checkbox"/> Forced Recirculation fan horsepower: _____	
26. FGR capacity at full load: _____ scfm _____%FGR	
27. FGR gas temperature or load at which FGR commences: _____ °F _____% load	
28. Where is recirculation flue gas reintroduced? _____	

For Oxygen Trim Systems

29. Manufacturer and Model Number: _____	
30. Recorder: <input type="checkbox"/> yes <input type="checkbox"/> no Describe: _____	

Stack or Vent Data

31. Inside stack diameter or dimensions _____ Stack height above the ground _____ Stack height above the building _____	32. Gas exit temperature: _____ °F
33. Stack serves: <input type="checkbox"/> this equipment only, <input type="checkbox"/> other equipment (submit type and rating of all other equipment exhausted through this stack or vent)	
34. Stack flow rate: _____ acfm Vertically restricted? <input type="checkbox"/> Yes <input type="checkbox"/> No	

Emissions Calculations (PTE)

35. Calculated emissions for this device			
PM ₁₀ _____ Lbs/hr _____ Tons/yr	PM _{2.5} _____ Lbs/hr _____ Tons/yr	NO _x _____ Lbs/hr _____ Tons/yr	SO _x _____ Lbs/hr _____ Tons/yr
CO _____ Lbs/hr _____ Tons/yr	VOC _____ Lbs/hr _____ Tons/yr	CO ₂ _____ Tons/yr	CH ₄ _____ Tons/yr
N ₂ O _____ Tons/yr		HAPs _____ Lbs/hr (speciate) _____ Tons/yr (speciate)	
Submit calculations as an appendix. If other pollutants are emitted, include the emissions in the appendix.			

Instructions Form 19 – Natural Gas Boiler and Liquid Heater

This application form is applicable to natural gas-fired boilers and liquid heaters. Boiler(s) rated for a total of less than five million Btu per hr and fueled by natural gas and one million Btu per hour and fired by fuel oil numbers 1-6 are exempt from filing a Notice of Intent to construct. See Source Category Exemptions R307-401-10 (1) and (2).

- NOTE: 1. **Submit this form in conjunction with Form 1 and Form 2.**
2. Call the Division of Air Quality (DAQ) at **(801) 536-4000** if you have problems or questions in filling out this form. Ask to speak with a New Source Review engineer. We will be glad to help!
 3. Attach specification sheets for all burners, equipment and modifications to boiler.
1. Company name of manufacturer of boiler (specifically the pressure vessel or shell).
 2. Manufacturer's model number.
 3. Specific identification, serial, number of the boiler.
 4. The maximum heat input for which the boiler is rated. Give the value in million British thermal units per hour.
 5. The operating schedule for which you want to be permitted. The air quality impact will be evaluated according to this schedule. Note: The approval order will limit operating hours to what you request.
 6. Mark the box indicating the purpose of the boiler.
 7. Mark all fuels that you wish to be approved to use, also list the backup fuel to be used if any.
 8. If a waste stream is burned, answer yes and submit drawings, etc. to characterize the method.
 9. Company name of manufacturer of gas burners. If the boiler is a packaged boiler, list the manufacturer of the boiler.
 10. How many gas burners will be installed in the boiler?
 11. Minimum gas flow rate at which each burner can operate (in cubic feet per hour)
 12. The average load at which you plan to operate each burner, compared to the maximum burner rating.
 13. Maximum gas flow rate at which each burner can operate (in cubic feet per hour)
 14. List the maximum concentration which the manufacturer guarantees the burners will produce in parts per million of Nitrogen Oxides (NO_x), Carbon Monoxide (CO), and Total Hydrocarbons. If the percentage of Non-methane hydrocarbons is known, please provide that information.
 15. Indicate the method used to control the flame for the burners.
 16. Company name of manufacturer of oil burners. If the boiler is a packaged boiler, and has dual fuel capability, list the manufacturer of the boiler.
 17. Manufacturer's model, number (quantity), and size of oil burners to be installed in the boiler.
 18. Minimum oil flow rate at which each burner can operate (in gallons per hour).
 19. Maximum oil flow rate at which each burner can operate (in gallons per hour).
 20. Indicate the type of emissions reduction strategy(ies) used in the proposed boiler.
 21. Indicate the low-NO_x strategy used in the burner design.
 22. Company name of manufacturer of the burners. Manufacturer's model number for the burners.
 23. The heat input rating of each burner in million British thermal units per hour.
 24. In a forced draft design, the horsepower of the fan motor used.
 25. Method for delivering the flue gas to the combustion zone. Forced draft indicates the presence of a fan. Give the fan horsepower if so equipped.
 26. The amount of flue gas which can be recirculated, in standard cubic feet per minute. And the percentage of the flue gas that can be recirculated at full load.
 27. Generally, flue gas recirculation systems start up at a given load or temperature. Give that specification.
 28. Where in relation to the burner/combustion zone is the flue gas reintroduced to the boiler?
 29. Name of the manufacturer and the model number of the oxygen trim system.
 30. Is there a data recorder? If so, describe it: What is recorded? How is it read?
 31. Give the inside diameter or the dimensions of the stack. List the stack height above the ground and above the building in which it is located, describe if the gas flow is vertically restricted. This information will be used in modeling the impact of emissions on the ambient air.
 32. Give the expected gas exit temperature at the end of the stack. Also to be used in modeling.
 33. Indicate if other equipment is also vented to this stack. If other equipment is served by the stack, provide the flow rates, operating parameters, fuel and combustion information that can be used to characterize the total emissions from the stack.
 34. Give the gas flow rate out of the stack in actual cubic feet per minute (acfm).
 35. Supply calculations for all criteria pollutants, greenhouse gases and HAPs. Use AP42 or Manufacturers' data to complete your calculations.