SHASTA COUNTY AIR QUALITY MANAGEMENT DISTRICT

TUNE-UP CHECKLIST

District Rule 3:26: Tuning Procedure Attachment #1

Facility Name:_____ Device:_____

Tester Name & Company:_____ Test Date:_____

(1) Operation of unit at firing rate "most typical of normal" operation: _____ yes _____ no
(if "no" explain:_____)

(2) At normal firing rate, record: - stack gas temperature = _____ºF or ºC
- O_2 concentration = _____ % _____ppm
- CO concentration = _____ % _____ppm
- Observed flame conditions = _____

Note: If excess O_2 in the stack gas is at the lower end of typical range (0.5% - 3.0%), if CO is low, and if there is no smoke, the unit is probably at near optimum efficiency.

(3) Increase combustion air flow until stack gas O_2 levels increase by 1-2% over normal level,
record: - stack gas temperature = _____ºF or ºC
- CO concentration = _____% _____ppm
- Observed flame conditions = _____

(4) Decrease combustion air flow until stack returns to normal O_2 level = _____%
Gradually reduce combustion air flow in small increments:

Increment 1: stack gas temperature = _____ºF or ºC
O_2 concentration = _____% _____ppm
CO concentration = _____% _____ppm
Observed flame conditions = _____

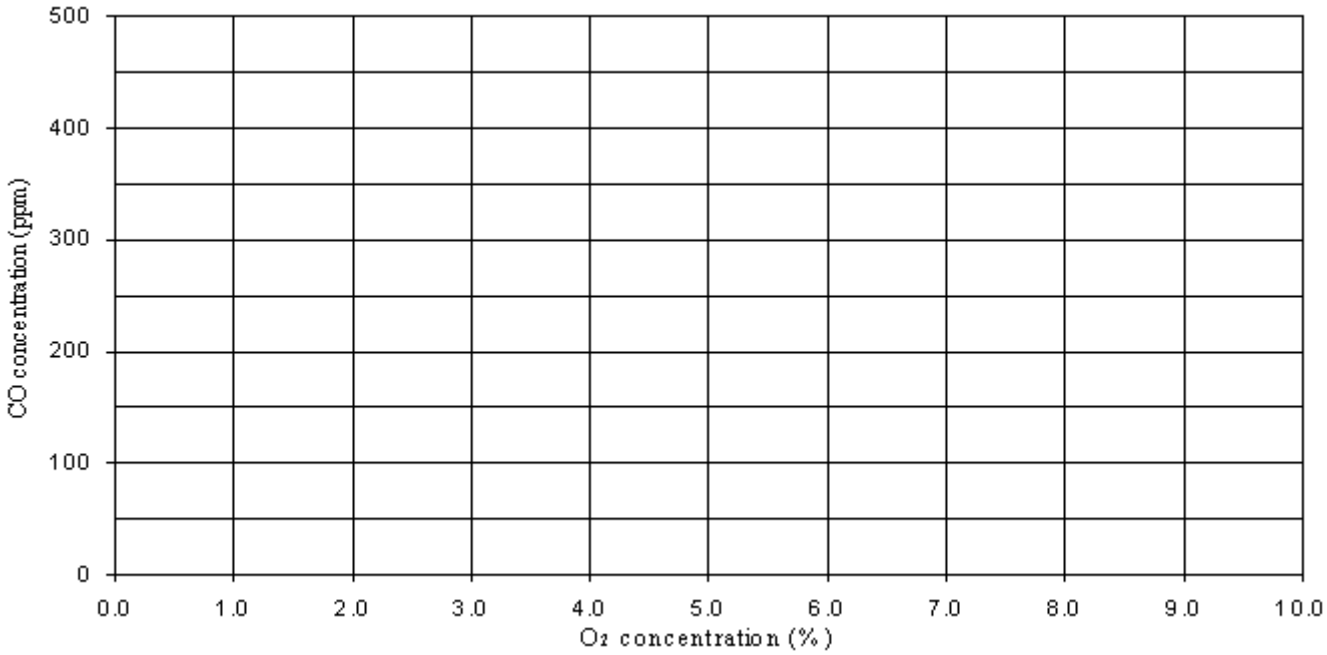
Increment 2: stack gas temperature = _____ºF or ºC
O_2 concentration = _____% _____ppm
CO concentration = _____% _____ppm
Observed flame conditions = _____

Increment 3: stack gas temperature = _____ºF or ºC
O_2 concentration = _____% _____ppm
CO concentration = _____% _____ppm
Observed flame conditions = _____

(5) Continue to gradually reduce combustion air flow until one of the following conditions occurs first:

- unacceptable flame conditions = _____ explain:_____
- CO concentrations > 400 ppm = _____ _____ ppm
- smoke observed in stack = _____
- equipment-related limitations = _____ explain:_____

(6) Graph an "O_2: CO" concentration curve using information from checklist #2, #3, & #4 results plus any added increments information:
This point will represent the "minimum" excess O_2 level = _____%



_____Note: Compare this minimum value to the expected value provided by the manufacturer; adjustments can be made to improve fuel and air mix if observed values differ.

(7) From the above curve, locate O_2 levels where CO emissions = 400 ppm

(8) Add 0.5 - 2.0% to the minimum excess O_2 level whereby _____% + (0.5 - 2.0%) = _____%

Note: If the above adjusted level is not possible, obtain a level as appropriate & explain your reasoning for this:_____

Adjust burner controls to operate at the increased O_2 level → Tune-up is completed

Note: Please submit all supporting data: data logs, worksheets, etc. to the District

(9) If the load varies significantly during normal operation, it may be necessary to repeat steps 1-8 for firing rates that represent the upper and lower limits of the range of the load.

(10) Verify that the new settings can accommodate the sudden changes that may occur in daily operation without adverse effects.