Combustion Safety Data Sheet

Date: _____ Auditor:_____

Client: _____ Weather Conditions: _____

CAZ Details

CAZ Location:_____

Gas/Fuel Leaks:_____

Verified with Bubbles?_____

Electrical Hazards?_____

Signs of Flame Rollout?_____

Signs of Spillage?_____

Any Safety/Fire Hazards?_____

Does vent have ¼" per/ft rise? YES NO N/A

Is venting correct material? YES NO N/A

Is masonry chimney lined? YES NO N/A

Ambient CO: _____

1. Measured Volume of CAZ (ft3) _____
2. BTU/hr input x 0.05 = _____
3. If line 2 is more than line 1 then combustion air may need to be added to CAZ

Before Testing

_____ I have already calibrated gas sniffer outside and checked all accessible lines

_____ I have already calibrated CO meter outdoors, checked and verified that the house is safe

_____ I have the ambient CO monitor running at all times during testing

_____ I have located the system filter(s) (air handler, dryer, etc.) and verified it's clean or removed

_____ I have identified the system type(s), safety controls and parts

_____ I have identified test locations for Spillage, Draft, CO & SSE measurements

_____ I have already calibrated combustion analyzer outside and have it ready to use

Equipment Identification

of Combustion Appliances in the CAZ: _____ Combined Flues? _____

Appliance & Category (I, III, or IV) 1) _____

2) _____ 3)_____

Metal venting system usually means Category I (unless it's a fireplace or space heater)
Plastic pipes typically mean Category IV

(Compare to Channel A)
CAZ Depressurization Limit:_____ Outside Temp:_____

(Compare to Channel B)
Min. Acceptable Draft:_____
(Outside Temp ÷ 40) - 2.75 =

Manufacturer Heat Rise:_____

Worst Case Depressurization Protocol

1. Set up manometer and pressure hoses to measure CAZ (WRT) outdoors (page 9)
2. Setup house in ***NATURAL CONDITIONS*** (page 2); follow ***BASELINE FUNCTION*** (page 2)
3. Turn on all exhaust fans [bath fans, kitchen fans, dryers] (DO NOT turn on whole house fans). Close all interior doors to rooms
4. Starting as far away from the CAZ as possible; Smoke/pressure test only those doors that have fans behind them – keeping your back toward the CAZ

If smoke is pulled under the door, open the door
If the smoke hits your toes, the door stays closed

		CAZ PA
Little Fan(s)	5. Open door, if present, between CAZ and Main Body of house Record Pressure	
	6. Close door between CAZ and Main Body of house Record pressure (if no door, skip to step 7)	
Big Fan(s)	7. Turn on air handler blower. Recheck position of **all** interior doors. Open CAZ door and record pressure	
	8. Close door between CAZ and Main Body of house Record pressure	

9. Recreate Worst Case Conditions for each CAZ (Most negative pressure recorded for steps 5-8)
10. Fire the appliance(s). If a combined flue, always fire the smallest Btu appliance first
11. Perform Worst Case Spillage, Draft, Undiluted CO, and SSE tests for each appliance
12. Check Ambient CO Levels (<35 ppm?)
13. Measure Heat Rise (Supply__ - Return___= ___ ΔT)

Minimum Draft Calc:
Maximum Dep. Limit:
Manuf. Heat Rise

		Worst Case	Natural Conditions (only if failed at WC)
Appliance 1	Spillage	Pass ☐ Fail ☐	Pass ☐ Fail ☐
	Draft	_____ PA	_____ PA
	CO (Highest)	_____ PPM	_____ PPM
	SSE	_____ %	_____ %
Appliance 2	Spillage	Pass ☐ Fail ☐	Pass ☐ Fail ☐
	Draft	_____ PA	_____ PA
	CO (Highest)	_____ PPM	_____ PPM
	SSE	_____ %	_____ %

14. Turn off the appliance(s) being tested
15. Determine if your CAZ Depressurization was exceeded. If so, how would you correct this?

When CAZ depressurization limits are exceeded under worst-case conditions according to the CAZ Depressurization Limit table, make up air must be provided or other modifications to the building shell or exhaust appliances must be included in the work scope to bring the depressurization within acceptable limits.

16. Interpret the BPI Action Levels

Gas Range and Oven Testing

Pretest Safety Checklist

- ❑ I have already calibrated CO meter and checked the whole house
- ❑ I have the CO meter running at all times during testing
- ❑ I have already calibrated gas sniffer and sniffed all accessible gas lines.
- ❑ I have either:
  1) turned on the kitchen exhaust fan
  or
  2) turned on the kitchen recirculation fan and opened a window

The oven vent is typically around the center of the back of the range top

Flame Impingement causes incomplete combustion and carbon monoxide

Tip: Avoid pulling gas ovens off walls as you may break the gas line. If you remove the bottom drawer or open the broiler you can often sniff the gas lines from the front.

Testing Gas Ovens

1. Remove any items/foil in or on oven
2. Make sure self cleaning features are not activated, set oven to highest setting.
3. After 5 minutes of operation, check undiluted CO in the vent. A flexible tip may be necessary

   Measured CO from oven vent:_____
5. Interpret results for Action Levels (see below)

Level I Action *- 100 ppm to 300 ppm as measured you must install a carbon monoxide detector and recommendation for service must be made to the consumer.*
Level II Action *- Greater than 300 ppm as measured - the unit must be serviced prior to work. If greater than 300 ppm after servicing, exhaust ventilation must be provided with a capacity of 25 CFM continuous or 100 CFM intermittent.*

Testing Range Tops

1. Inspect ignition and flame of each burner
   - If burners do not light properly or burn cleanly then recommend a clean & tune
   - If the flame is too high – rising above the cooking grate - then recommend lowering the gas pressure along with a clean & tune

   Any Ignition Issues?_____
2. Any Flame Impingement or Discoloration? Yes/No

   Front Left:_____ Back Left:_____

   Front Right:_____ Back Right:_____
3. Interpret results for Action Levels and Recommendation:

   _____

   _____

Since all gas cooktops generate CO and it is difficult to simulate an actual operating condition for these appliances during the course of a typical house inspection, specific action levels for these burners are not specified by BPI.

However, technicians must specify appropriate measures to mitigate potentially dangerous CO production of these units.