CLAIMS

1. A pilot unit for an abatement apparatus configured to abate an effluent stream from a semiconductor processing tool, the pilot unit comprising:

a housing retaining a foraminous pilot surface, the housing and foraminous pilot surface defining a plenum which is configured to convey fuel and oxidant from a corresponding housing inlet and through that foraminous pilot surface; and

an ignitor configured to ignite the fuel and oxidant when exiting the foraminous pilot surface,

in which the foraminous pilot surface defines at least one aperture to receive at least one of the ignitor, a sight port and a sensor.

2. A pilot unit according to Claim 1, in which the foraminous pilot surface is positioned on one of an external and an outer surface of the housing.

3. A pilot unit according to Claim 1or 2, in which the foraminous pilot surface is shaped to fit proximate a burner of the abatement apparatus.

4. A pilot unit according to any preceding claim, in which the foraminous pilot surface is shaped to fit proximate at least one of a plurality of burners of the abatement apparatus.

5. A pilot unit according to Claim 4, in which the foraminous pilot surface is at least one of:

shaped to abut at least one of the plurality of burners of the abatement apparatus;

shaped to abut a combustion surface of at least one of the plurality of burners of the abatement apparatus;

shaped to provide a continuation of a combustion surface of at least one of the plurality of burners of the abatement apparatus;

shaped to extend along an edge of at least one of the plurality of burners of the abatement apparatus; and

shaped to extend along at least a portion of a perimeter of at least one of the plurality of burners of the abatement apparatus.

6. A pilot unit according to Claim 4 or 5, in which the pilot unit is at least one of:

configured to locate the foraminous pilot surface to ignite fuel and oxidant exiting at least one of the plurality of burners of the abatement apparatus; and

configured to locate the foraminous pilot surface towards an exhaust of at least one of the plurality of burners of the abatement apparatus.

7. A pilot unit according to any preceding claim, in which the foraminous pilot surface is at least one of planar and elongate.

8. A pilot unit according to any preceding claim, in which the foraminous pilot surface comprises a plurality of adjacent foraminous pilot surfaces.

9. A pilot unit according to Claim 8, in which one of the plurality of adjacent foraminous pilot surfaces defines the at least one aperture.

10. A pilot unit according to any preceding claim, in which the housing comprises a main housing and a removably retained sub-housing, the foraminous pilot surface by retained by the sub-housing.

11. A pilot unit according to Claim 10, in which the main housing is formed of material having at least one of a lower use temperature and lower oxidation resistance than material forming the sub-housing.

12. A pilot unit according to Claim 10 or 11, in which the main housing defines a main plenum and the sub-housing defines a sub-plenum, the sub-plenum being in fluid communication with the main plenum.

13. A pilot unit according to any preceding claim, in which the ignitor comprises a nozzle configured to generate a pilot flame to ignite the fuel and oxidant exiting the foraminous pilot surface.

14. A pilot unit according to Claim 13, in which the nozzle is retained within the pilot unit.

15. A pilot unit according to Claim 13 or 14, in which the nozzle comprises a nozzle conduit extending through the plenum.

16. A pilot unit according to any of Claims 12 to 15, comprising a fuel and oxidant manifold having a plurality of inlets, each inlet being configured to receive at least one of the fuel and

oxidant and configured to deliver the fuel and oxidant to the nozzle and the plenum in different stochiometric ratios.

17. A pilot unit according to Claim 16, in which the manifold delivers the fuel and oxidant to the nozzle with a richer ratio of fuel to oxidant compared to fuel to oxidant delivered to the plenum.

18. A pilot unit according to Claim 16 or 17, in which the manifold comprises at least one flow mixer configured to vary a mix of the fuel and oxidant to at least one of the nozzle and the plenum.

19. A pilot unit according to any preceding claim, in which the housing comprises a plurality of upstands configured to extend to at least the foraminous pilot surface.

20. An abatement apparatus comprising a pilot unit according to any preceding claim.

21. A method, comprising:

retaining a foraminous pilot surface in a housing to define a plenum;

defining at least one aperture in the foraminous pilot surface to receive at least one of the ignitor, a sight port and a sensor;

conveying fuel and oxidant from a corresponding housing inlet, through the plenum to the foraminous pilot surface; and

igniting the fuel and oxidant when exiting the foraminous pilot surface.