

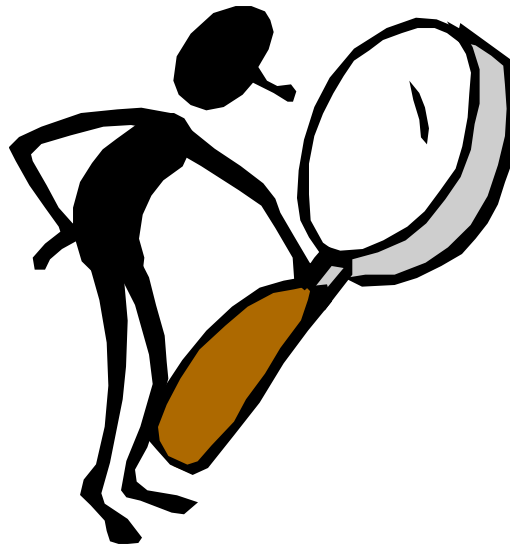
Förbränning: kvalitetskontroll och askhantering

Jan-Olov Sundqvist
IVL Svenska Miljöinstitutet AB
Stockholm

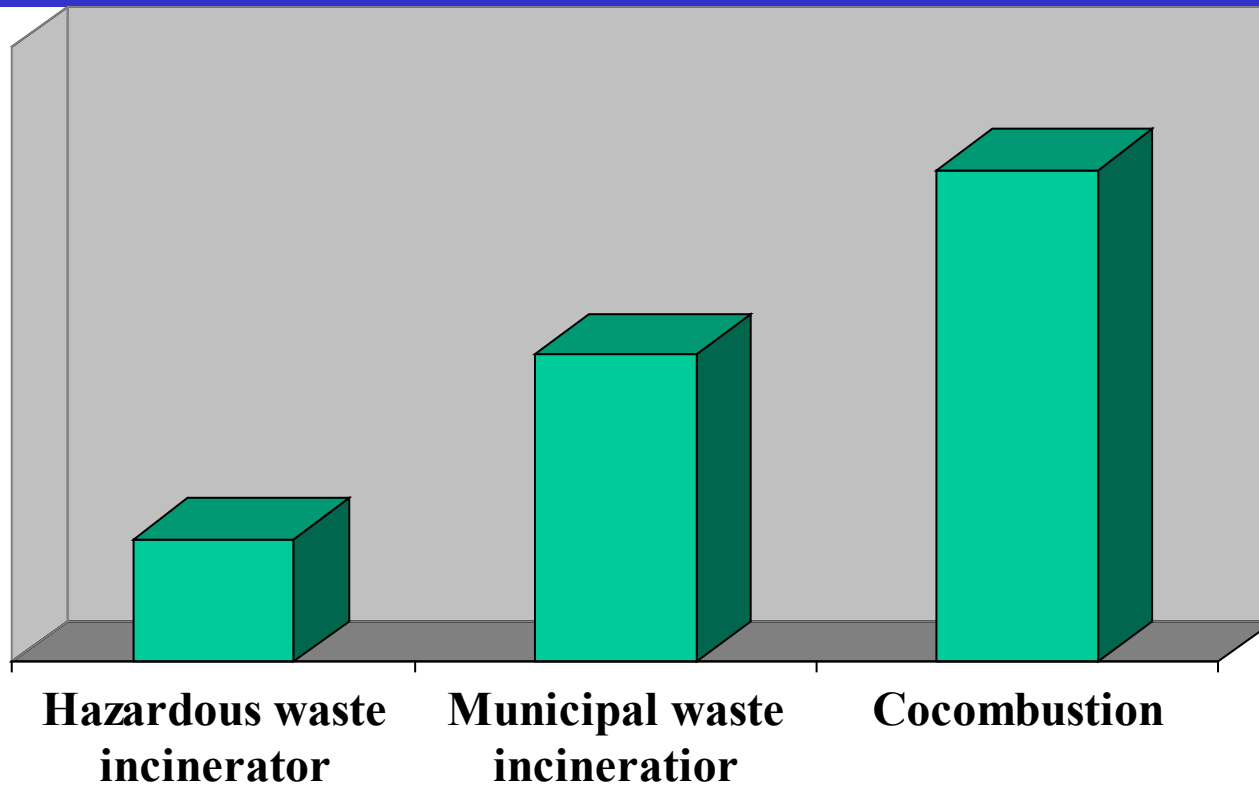


Jan-Olov Sundqvist, IVL

Quality assurance



Sensitivity against critical properties



Quality assurance

Every combustion or incineration plant has to know the input

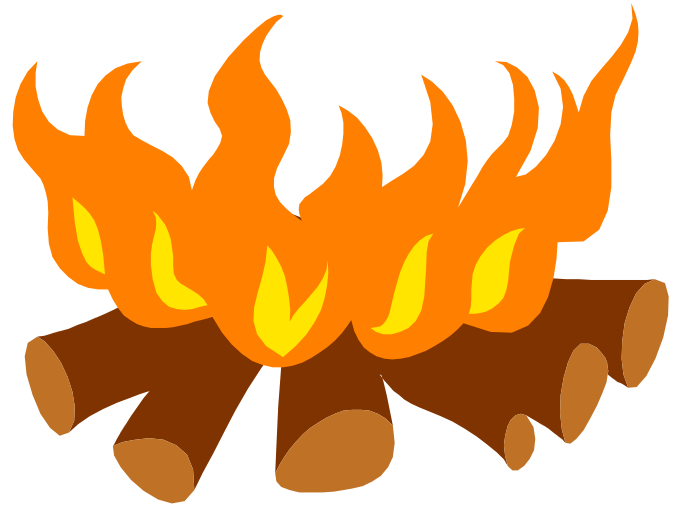
- critical thermal and process properties
- critical environmental parameters



st,

Thermal and process properties

- Heating value
- Moisture
- Ash
- Ash melting
- Proximate analysis: volatile/carbon
- Particle size, particle density



Operational problems

- Ash
- Na, K
- Cl: corrossion
- Particle size: feeding

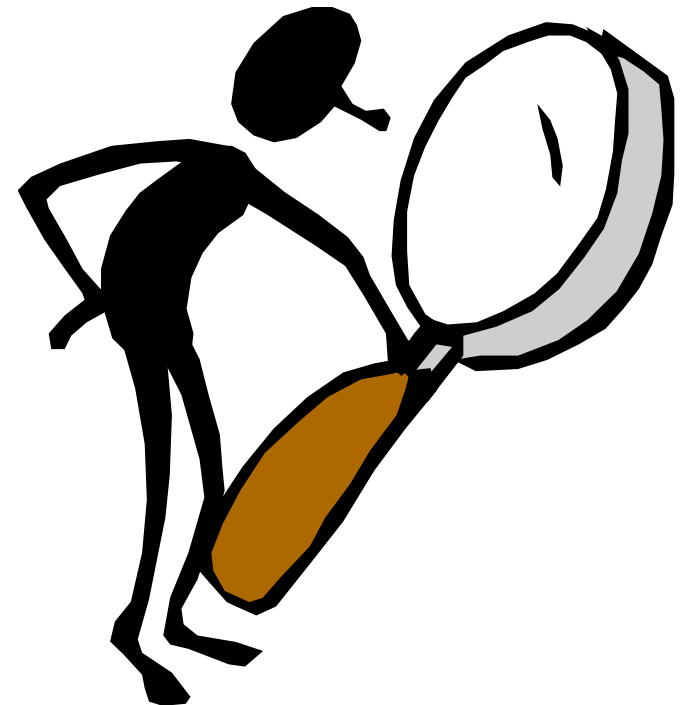
Environmental properties (waste composition)

- N
- Cl, F
- S
- Heavy metals
- As



Quality assurance

- Aim is to assure the right properties on the waste fuel
- Specification on the waste fuel: particle size, heating value, alkali metals, heavy metals, chlorine (PVC), metal scrap contamination, As, creosote
- Specifications is specific for each incinerator plant



Ash handling

- Bottom ash and slag
- Fly ash
- Flue gas cleaning waste
- Condensate



PHOTO: JOHN DEERE

Handling at the incinerator plant

- Incineration directive: requirements on C in ash
- Dust prevention→ add moisture
- But added moisture may start hardening



Some ashes may be hazardous waste

- Containing dangerous substances: e.g. As
- Disposal by safe landfilling:
 - hazardous waste in special landfill (e.g. leachate production < 5 liters/m²,year)
 - non-hazardous waste in ordinary landfill (e.g. leachate production < 50 liters/m².year)
- EU directive on landfilling of waste
- Permit, transport document, records, etc.....

Non-hazardous ashes

- Disposal by safe landfilling:
- Permit for landfill is required
- EU Directive on landfilling of waste
- Research and development on utilisation of slag and ashes
 - construction material
 - fertilizing forest
 - barrier or cover material on landfills